

ONKYO SERVICE MANUAL

QUARTZ SYNTHESIZED TUNER AMPLIFIER MODEL TX-910 MODEL TX-930

Black and Silver models

BHMD, BHMDN	120V AC, 60Hz
BHMP, BHMPF, MP, MPF	230V AC, 50Hz
BHMW	120V or 220V AC, 50/60Hz
BHMQA	240V AC, 50Hz

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK Δ ON THE SCHEMATIC DIAGRAM AND IN THE PARTS LIST ARE CRITICAL FOR RISK OF FIRE AND ELECTRIC SHOCK. REPLACE THESE COMPONENTS WITH ONKYO PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL.

MAKE LEAKAGE-CURRENT OR RESISTANCE MEASUREMENTS TO DETERMINE THAT EXPOSED PARTS ARE ACCEPTABLY INSULATED FROM THE SUPPLY CIRCUIT BEFORE RETURNING THE APPLIANCE TO THE CUSTOMER.

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ONKYO
AUDIO COMPONENTS

SPECIFICATIONS

AMPLIFIER SECTION

	TX-930	TX-910
Power Output:	60 watts per channel, min. RMS, at 8 ohms, both channels driven, from 40Hz to 20kHz, with no more than 0.2% THD.	45 watts per channel, min. RMS, at 8 ohms, both channels driven, from 40kHz to 20kHz, with no more than 0.3% THD.
Dynamic Power Output:	2 X 100 watts at 4 ohms	2 X 80 watts at 4 ohms
Continuous Power Output:	2 X 75 watts at 8 ohms	2 X 60 watts at 8 ohms
Total Harmonic Distortion:	2 X 80 watts at 4 ohms, 1kHz (DIN) 2 X 65 watts at 8 ohms, 1kHz (DIN)	2 X 60 watts at 4 ohms, 1kHz (DIN) 2 X 50 watts at 8 ohms, 1kHz (DIN)
IM Distortion:	0.2% at rated power 0.1% at 30 watt output	0.3% at rated power 0.1% at 30 watt output
Damping Factor:	50 at 8 ohms	50 at 8 ohms
Frequency Response:	20 — 30,000 Hz \pm 1dB	20 — 30,000 Hz \pm 1dB
RIAA Deviation:	20 — 20,000 Hz \pm 0.8dB	20 — 20,000 Hz \pm 0.8dB
Sensitivity and Impedance:	Phono: 2.5mV/50 kohms CD/Tape Play: 150mV/50 kohms Tape Rec: 150mV/3.5 kohms	Phono: 2.5mV/50 kohms CD/Tape Play: 150mV/50 kohms Tape Rec: 150mV/3.5 kohms
Phono Overload:	120mV RMS at 1kHz, 0.2% THD	120mV RMS at 1kHz, 0.3% THD
Signal-to-Noise Ratio:	Phono: 80dB (at 5mV input, IHF-A) CD/Tape: 100dB (IHF-A)	Phono: 80dB (at 5mV input, IHF-A) CD/Tape: 100dB (IHF-A)
Tone Controls:	Bass: \pm 10dB at 100Hz Treble: \pm 10dB at 10kHz	Bass: \pm 10dB at 100Hz Treble: \pm 10dB at 10kHz
Muting:	— ∞	— ∞
LOUDNESS (-30dB):	+7dB at 70Hz, +5dB at 10kHz	+7dB at 70Hz, +5dB at 10kHz

TUNER SECTION

FM:	—230V/Worldwide models—	
Tuning Range:	87.50—108.00MHz (50kHz steps) 87.5—108.00MHz (50kHz steps) or (200kHz steps) (Worldwide model)	
Usable Sensitivity:	Mono: 12.4dBf, 1.2 μ V, 75ohms 1.2 μ V (S/N 26dB, 40kHz Devi.) 75ohms DIN	
	Stereo: 19.2dBf, 2.5 μ V, 75ohms 25 μ V (S/N 46dB, Devi.)	Stereo: 18.2dBf, 4.5 μ V
50dB Quieting Sensitivity:	Mono: 18.2dBf, 2.2 μ V, 75ohms Stereo: 38.2dBf, 22 μ V, 75ohms	Mono: 18.2dBf, 4.5 μ V Stereo: 38.2dBf, 45 μ V
Caputre Ratio:	1.5dB	1.5dB
Image Rejection Ratio:	85dB	40dB
IF Rejection Ratio:	90dB	90dB
Signal-to-Noise Ratio:	Mono: 70dB Stereo: 65dB	Mono: 70dB Stereo: 65dB
Alternate Channel Attenuation:		
Selectivity:	50dB DIN (\pm 300kHz, 40kHz dev.)	50dB
AM suppression Ratio:	50dB	50dB
Harmonic Distortion:	Mono: 0.15% Stereo: 0.30%	Mono: 0.15% Stereo: 0.30%
Frequency Response:	30—15,000Hz \pm 1.5dB	30—15,000Hz \pm 1.5dB
Stereo Separation:	40dB at 1kHz 30dB at 100—10,000Hz	40dB at 1kHz 30dB at 100—10,000Hz
Muting Level:	17.2dBf, 4 μ V	17.2dBf, 4 μ V
AM:		
Tuning Range:	522—1610kHz (9kHz steps) 522—1610kHz (9kHz steps) or 530—1710kHz (10kHz steps) (World wide model)	530—1710kHz (10kHz steps)
Usable Sensitivity:	30 μ V	30 μ V
Image Rejection Ratio:	40dB	40dB
IF Rejection Ratio:	40dB	40dB
Signal-to-Noise Ratio:	40dB	40dB
Harmonic Distortion:	0.8%	0.8%

GENERAL

	TX-930	TX-910
Dimensions (W×H×D):	455×120×316mm 17-15/16" × 4-6/8" × 12-7/16"	455×120×316mm 17-15/16" × 4-6/8" × 12-7/16"
Weight:	8.0kg, 17.6 lbs.	7.2kg, 15.9 lbs.

Remote control transmitter RC-223S

Transmitter: Infrared
 Signal range: Approx. 5 meters (16ft. \times 4")
 Power supply: Two "AA" batteries(1.5V \times 2)

Specifications and features are subject to change without notice.

SERVICE PROCEDURES

1. Replacing the fuses

For continued protection against fire hazard, replace only with same type and same rating fuse.

Circuit No.	Part No.	Description	Model	Type
F901	252049	4A(ST-6),Primary	TX-910	MD/MW
F901	252050	5A(ST-6),Primary	TX-930	MD/MW
F902	252073	1.6A-SE-EAK,Primary	TX-910	MP/MW/MQ
F902	252075	2.5A-SE-EAK,Primary	TX-930	MP/MW/MQ
F951	252074	2.2A-SE-EAK,AC outlet	TX-930	MP

2. Safety-check out

(Only U.S.A. model)

After correcting the original service problem, perform the following safety check before releasing the set to the customer.

Connect the insulating-resistance tester between the plug of power supply cord and nickel screw on the back panel.

Specifications: 3.3Mohm \pm 10% at 500V.

3. Change of voltage

Worldwide models are equipped with a voltage selector to conform with local power supplies. This switch is located on the back panel. Be sure to set this switch to match the voltage of the power supply in your area before turning the power switch on.

This switch is set to 220V at the factory. Voltage is changed by sliding the groove in the switch with the screwdriver to the right or left. Confirm that the switch has been moved all the way to the right or left before turning the power switch on.

4. Step band selector switch

Worldwide models are equipped with a step band selector switch. This switch is located on the back panel. This switch is set to 50kHz (FM) and 9kHz (AM) at the factory, but may have to be reset to 100kHz and 10kHz depending on the area where the unit is used.

De-emphasis	FM step	AM step
Europe: 50 μ sec	50kHz	9kHz
U.S.A.: 75 μ sec	200kHz	10kHz

5. Changing the band step

With the exception of the models below, a BAND STEP selector switch is not provided.

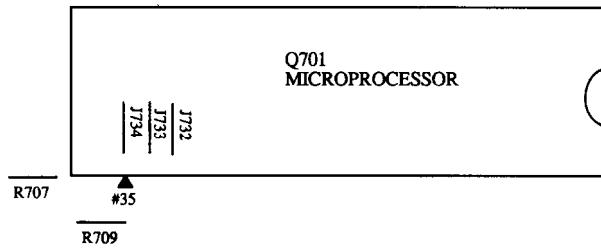
(FM)

MODEL	BAND STEP	R707(10k Ω)	J734
UD	200kHz \rightarrow 50kHz	Add	Cut
UP/UQ	50kHz \rightarrow 200kHz		Shorted

(AM)

MODEL	BAND STEP	R709(10k Ω)	J732
UD	10kHz \rightarrow 9kHz		Shorted
UP/UQ	9kHz \rightarrow 10kHz	Add	Cut

Refer to the page 23.

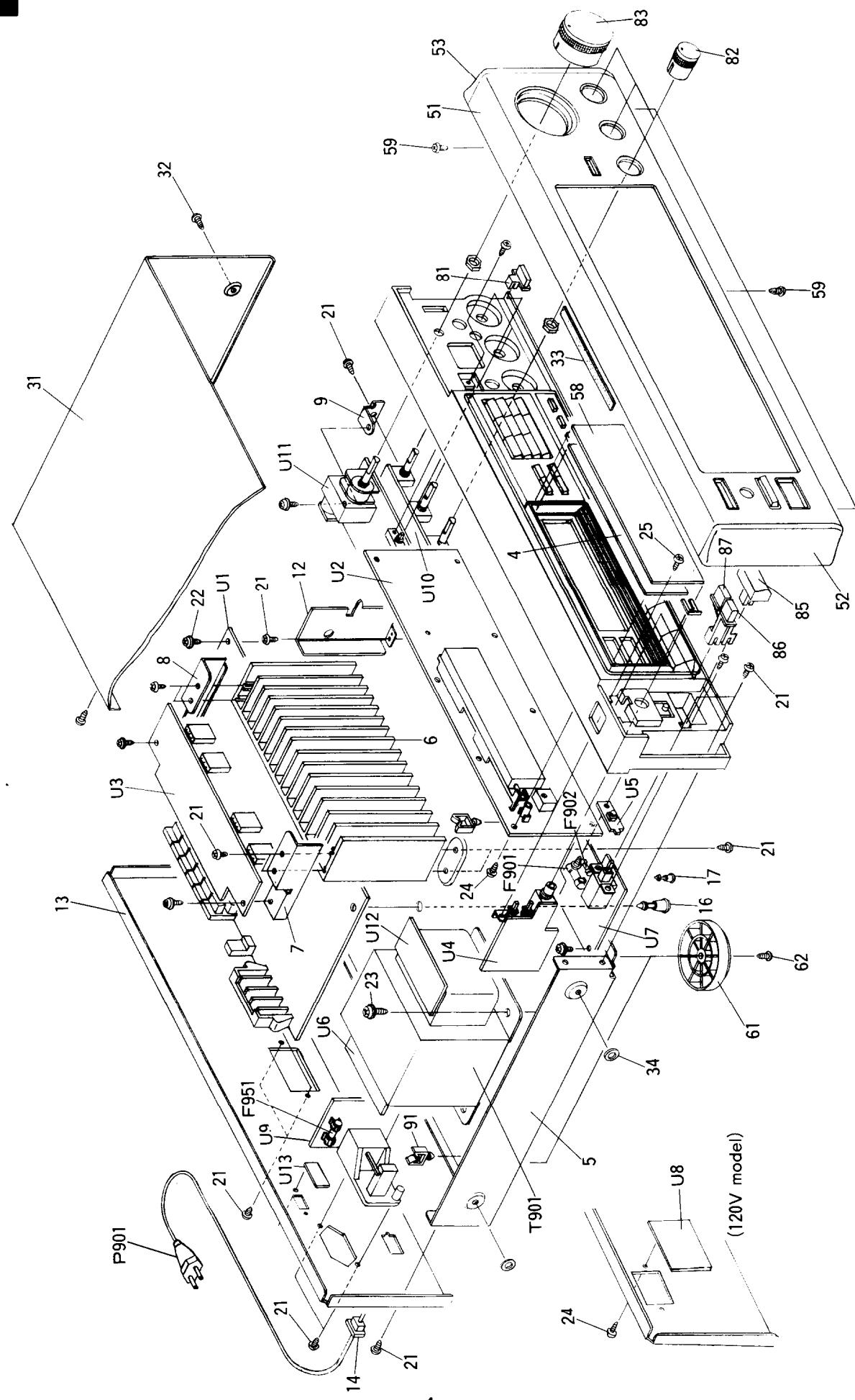


6. Memory preservation

This unit does not require memory preservation batteries. A built-in memory power back-up system preserves contents of the memory during power failures and even when the unit is unplugged. The unit must be plugged in and the power switch turned on and off once in order to charge the back-up system. Note that since this is not a permanent memory, the power switch must be turned on and off a few times each month to keep the back-up system operative. The period of time during which memory contents are preserved after power has last been turned off varies depending on climate and placement of the unit. On the average, memory contents are protected over a period of 3 to 4 weeks (a minimum of 2 weeks) after the last time power has been turned off. This period is shorter when the unit is exposed to very high humidity or used in an area with an extremely humid climate.

EXPLODED VIEW

MODEL TX-930



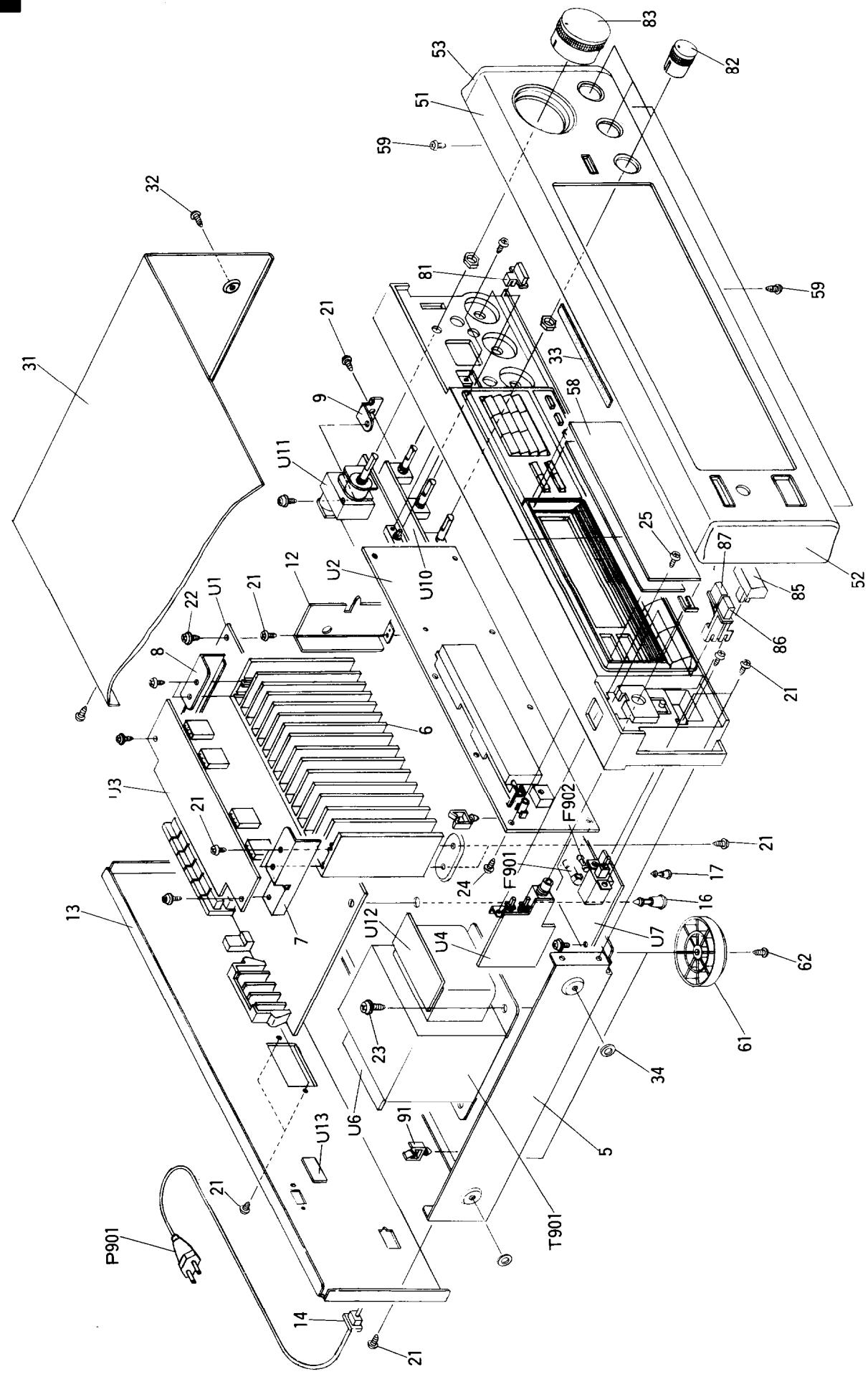
PARTS LIST

REF. NO.	PART NO.	DESCRIPTION	REF. NO.	PART NO.	DESCRIPTION	REF. NO.	PART NO.	DESCRIPTION
1	27110749Y	Front bracket ass'y 	86	28324170	Knob, Speaker A 	U3	1A415527-3	NAAF-4327-3,Power amplifier circuit pc board ass'y <D>
	27110750Y	Front bracket ass'y <S>	87	28324172	Knob, Speaker A <S>			NAAF-4327-3A,Power amplifier circuit pc board ass'y <P/W/Q>
4	28133254Y	Back plate	87	28324171	Knob, Speaker B 			NAAF-4327-3A,Power amplifier circuit pc board ass'y <P/W/Q>
5	27100228Y	Chassis	23824173	Knob, Speaker B <S>				NASW-4328-3,Headphone terminal pc board ass'y <D>
6	27160293Y	Radiator	91	27300833	WS-2NS Clamp	U4	1A415528-3	NASW-4328-3,Headphone terminal pc board ass'y <D>
7	27141441Y	Bracket LH	F001	252050	▲ :A(SST-6) Primary fuse <D/W>			NASW-4328-3A,Headphone terminal pc board ass'y <P/W/Q>
8	27141442Y	Bracket RH	F002	252075	▲ :2.5A-SE-EAK,Primary fuse <P/W/Q>			NASW-4328-3A,Headphone terminal pc board ass'y <P/W/Q>
9	27141443Y	Bracket PC	F051	25204	▲ :2A-SE-BAK,Fuse <P>			NASW-4328-3,Headphone terminal pc board ass'y <P/W/Q>
12	27130643AY	Bracket, Shield	F401	253163Y or	▲ :AS-DC-6 #18,	U5	1A415529-3	NASW-4328-3,Power switch pc board ass'y
13	27121686Y	Rear panel <D>		253174Y	▲ :Power supply cord <D>			NAETC-4330-3,Terminal pc board NAPS-4331-3,Power supply circuit
	27121687Y	Rear panel <P>		253164X or	▲ :AS-CHE,	U6	1A415530-3	NAETC-4330-3,Terminal pc board NAPS-4331-3,Power supply circuit
	27121689Y	Rear panel <W>		253175Y	▲ :Power supply cord <P/W>	U7	1A415531-3	NAETC-4330-3,Terminal pc board NAPS-4331-3,Power supply circuit
	27121690Y	Rear panel <Q>		253170	▲ :AS-SAA,Power supply cord <Q>			pc board ass'y <D>
14	27100750	▲ :Bushing, cord	P002	2506044	Terminal GND			NAPS-4331-3A,Power supply circuit pc board ass'y <P>
16	27190524	KGLS-14RT,Holder	P051	25050904	▲ :NSCT-2P697,AC outlet <Q>			NAPS-4331-3B,Power supply circuit pc board ass'y <W>
17	27190266	KGLS-12RT,Holder	Q503	Q504 2202282,	2SA1265N-R,			NAPS-4331-3B,Power supply circuit pc board ass'y <W>
21	834430088	3TT5-8B(BC),Self-tapping screw		2202283,	2SA1265N-O,			NAPS-4331-3C,Power supply circuit pc board ass'y <Q>
22	831130088	3TTW-8B,Self-tapping screw		2201693,	2SA1491-O,			NAETC-4332-3,Outlet terminal pc board ass'y <D>
23	830440089	4TTC-8C(BC),Self-tapping screw		2201694 or	2SA1491-Y or			NAETC-4332-3,Outlet terminal pc board ass'y <D>
24	833430080	3TTP-8P(BC),Self-tapping screw		2201696	2SA1491-P,Power transistors	U8	1A415532-3	NAETC-4333-3,Outlet terminal pc board ass'y <P>
25	82143006	3P-6FN(BC),Pan head screw	Q505	Q506 2202292,	2SC3182N-R,			NAETC-4333-3A,Outlet terminal pc board ass'y <P>
26	801433	3SMS10W.SW+14B(BC),Sems		2202293,	2SC3182N-O,			NAETC-4333-3A,Outlet terminal pc board ass'y <W>
		Self-tapping screw		2201703,	2SC3855-Q,			NAETC-4333-3A,Outlet terminal pc board ass'y <W>
31	28184471AY	Top cover		2201704 or	2SC3855-Y or			NAETC-4333-3A,Outlet terminal pc board ass'y <W>
32	834430088	3TT5-8B(BC),Self-tapping screw		2201706	2SC3855-P,Power transistors			NAAF-4334-3,Tone control circuit pc board ass'y <D>
33	28140680	Cushion	T901	2300735AY	▲ :NPT-11290,Power transformer <D>	U10	1A415534-3	NAAF-4334-3,Tone control circuit pc board ass'y <P/W/Q>
34	27270212	Spacer <P/W/Q>		2300734Y	▲ :NPT-1129P,Power transformer <P>			NAAF-4334-3A,Tone control circuit pc board ass'y <P/W/Q>
51	1A415701K	Front panel ass'y 		2300735Y	▲ :NPT-1129DQ,Power transformer <W>			NAAF-4334-3A,Tone control circuit pc board ass'y <W>
	1A416701K	Front panel ass'y <S>		2300736Y	▲ :NPT-1129Q,Power transformer <Q>			NAETC-4335-3,Volume control circuit pc board ass'y <W>
52	28125226BY	End cap L	U1	1A415525-3	NARE-4325-3,Tuner circuit	U11	1A415535-3	NAETC-4335-3,Volume control circuit pc board ass'y <W>
53	28125227BY	End cap R			pc board ass'y <W>			NOTE: :Black model only <S>:Silver model only
58	28191617Y	Clear plate		1A415525-3A	NARE-4325-3A,Tuner circuit	U12	1A415537-3	NAETC-4337-3,Terminal pc board ass'y
59	833430080	3TTP-8P(BC),Self-tapping screw			pc board ass'y <P/W>	U13	1A415538-3	NASW-4338-3,Voltage selector switch <W>:Worldwide model only <Q>:240V model only
61	27175254	Leg	1A415525-3B	NARE-4325-3B,Tuner circuit				
62	834430088	3TT5-8B(BC),Self-tapping screw			pc board ass'y <W>			
81	28324162Y	Knob, Loudness 	U2	1A415526-3	NADIS-4326-3,Display circuit			
	28324177Y	Knob, Loudness <S>			pc board ass'y <D>			
82	28324150-1A	Knob, Level 	1A415526-3A	NADIS-4326-3A,Display circuit				
	28324151	Knob, Level <S>			pc board ass'y <P/Q>			
83	28324163	Knob, Volume 	1A415526-3B	NADIS-4326-3B,Display circuit				
	28324184	Knob, Volume <S>			pc board ass'y <W>			
85	28324140	Knob,Power 						
	28324184	Knob,Power <S>						

NOTE: THE COMPONENTS IDENTIFIED BY MARK ▲
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PART NUMBER SPECIFIED.

EXPLODED VIEW

MODEL TX-910



PARTS LIST

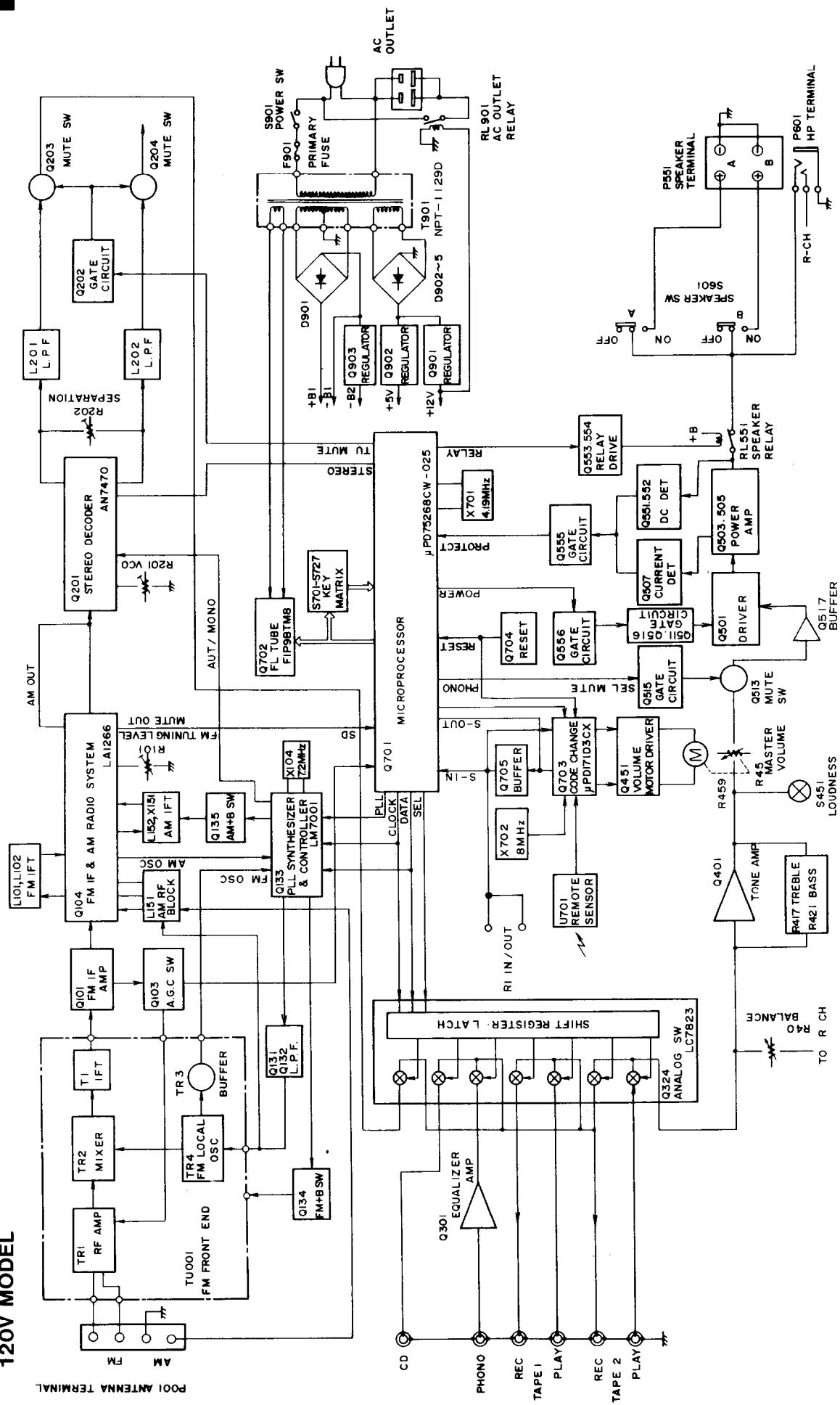
REF. NO.	PART NO.	DESCRIPTION	REF. NO.	PART NO.	DESCRIPTION	REF. NO.	PART NO.	DESCRIPTION
1	27110763Y	Front bracket ass'y 	83	28324163	Knob, Volume 	U2	IA419526-4	NADIS-4326-4,Display circuit pc board ass'y <D>
	27110764Y	Front bracket ass'y <S>		28324182	Knob, Volume <S>			NADIS-4326-4A,Display circuit pc board ass'y <P>
4	28133234Y	Back plate	85	28324140	Knob,Power 		IA419526-4A	NADIS-4326-4A,Display circuit pc board ass'y <W>
5	27100228Y	Chassis		28324184	Knob,Power <S>			NADIS-4326-4B,Display circuit pc board ass'y <W>
6	27160272AY or	Radiator	86	28324170	Knob, Speaker A 		IA419526-4B	NADIS-4326-4B,Display circuit pc board ass'y <W>
	27160290Y	Radiator		28324172	Knob, Speaker A <S>			NAAF-4327-4,Power amplifier circuit pc board ass'y <D>
7	27141441Y	Bracket LH	87	23824171	Knob, Speaker B 	U3	IA419527-4	NAAF-4327-4,Power amplifier circuit pc board ass'y <W>
8	27141442Y	Bracket RH		23824173	Knob, Speaker B <S>			NAAF-4327-4A,Power amplifier circuit pc board ass'y <P>/W/Q>
9	27141443Y	Bracket PC	91	27300833	WS-2NS,Clamp		IA419527-4A	NAAF-4327-4A,Power amplifier circuit pc board ass'y <P>/W/Q>
12	27130643AY	Bracket, shield	P901	252049	▲ AK(ST-6),Primary fuse <D/W>			NASW-4328-4,Headphone terminal pc board ass'y <D>
13	27121691Y	Rear panel <D>	P902	252073	▲ 1.6A, SE-EAK,Primary fuse <P>/W/Q>	U4	IA419528-4	NASW-4328-4,Headphone terminal pc board ass'y <D>
	27121692Y	Rear panel <P>	P901	253163Y or	▲ AS-UC-6 #18,			NASW-4328-4A,Headphone terminal pc board ass'y <P>/W/Q>
	27121694Y	Rear panel <W>		253174Y	▲ Power supply cord <D>		IA419528-4A	NASW-4328-4A,Headphone terminal pc board ass'y <P>/W/Q>
	27121695Y	Rear panel <Q>		253164Y or	▲ AS-SCHE.			NASW-4329-4,Power switch
14	27300750	▲ Bushing, cord		253175Y	▲ Power supply cord <P>/W>	U5	IA419529-4	NASW-4329-4,Power switch
16	27190524	KGLS-14RT,Holder		253170	▲ AS-SAA,Power supply cord <Q>			pc board ass'y <Q>
17	27190266	KGLS-12RT,Holder	P902	25060044	Terminal GND	~ U7	IA419531-4	NAPS-4331-4,Power supply circuit
				Q503,Q504	2202492			pc board ass'y <D>
21	834430088	3TTS-8B(BC),Self-tapping screw			2SA1264N-R,		IA419531-4A	NAPS-4331-4A,Power supply circuit
22	831130088	3TTW+8B,Self-tapping screw			2202493			pc board ass'y <P>
					2SA1264N-O,			NAPS-4331-4B,Power supply circuit
23	830440089	4TTC-8C(BC),Self-tapping screw			2202243			pc board ass'y <W>
					2SA1694-O,			NAPS-4331-4C,Power supply circuit
24	833430080	3TTP+8P(BC),Self-tapping screw			2202244			pc board ass'y <Q>
25	82143006	3P+GFN(BC),Pan head screw			2202246			NAAF-4334-4,Tone control circuit
26	801433	3SMS10W,SW-14B(BC),	Q505,Q506	2202502	2SC3812N-R,			pc board ass'y <D>
		Self-tapping screw			2SC3812N-O,			NAAF-4334-4A,Tone control circuit
31	28184471AY	Top cover		2202503	2SC4467-0,		U10	IA419534-4
32	834430088	3TTS-8B(BC),Self-tapping screw		2202253	2SC4467-Y or			pc board ass'y <D>
33	28140680	Cushion		2202254	2SC4467-P,Power amplifier transistor			NAAF-4334-4A,Tone control circuit
34	27270212	Spacer <P>/W/Q>		2202256	2SC4467-P,Power amplifier transistor			pc board ass'y <P>/W/Q>
51	IA419701K	Front panel ass'y 	P901	2300157Y	▲ NPT-1130D,Power transformer <D>		U11	IA419535-4
	IA420701K	Front panel ass'y <S>		2300158Y	▲ NPT-1130P,Power transformer <P>			NAETC-4335-4,Volume control
52	28125226BY	End cap L		2300159Y	▲ NPT-1130DQ,Power transformer <W>			pc board ass'y
		End cap R	U1	2300760Y	▲ NPT-1130Q,Power transformer <Q>			NASW-4338-4,Voltage selector switch
53	28125227BY	Clear plate		1A419525-4	NARF-4325-4,Turner circuit pc board ass'y <D>			pc board ass'y <W>
58	28191617Y	Clear plate						
59	833430080	3TTP+8P(BC),Self-tapping screw		1A419525-4A	NARF-4325-4A,Tuner circuit pc board ass'y <P>/Q>			NOTE: :Black model only
61	27175254	Leg		1A419525-4B	NARF-4325-4B,Tuner circuit pc board ass'y <W>			<S>:Silver model only
62	834430088	3TTS-8B(BC),Self-tapping screw						<D>:120 V model only
81	28324162Y	Knob, Loudness 						<P>:230 V model only
	28324177Y	Knob, Loudness <S>						<W>:Worldwide model only
82	28324150-1	Knob, Level 						<Q>:240 V model only
	28324151A	Knob, Level <S>						

NOTE: THE COMPONENTS IDENTIFIED BY MARK ▲ ARE CRITICAL FOR RISK OF FIRE AND ELECTRIC SHOCK. REPLACE ONLY WITH PART NUMBER SPECIFIED.

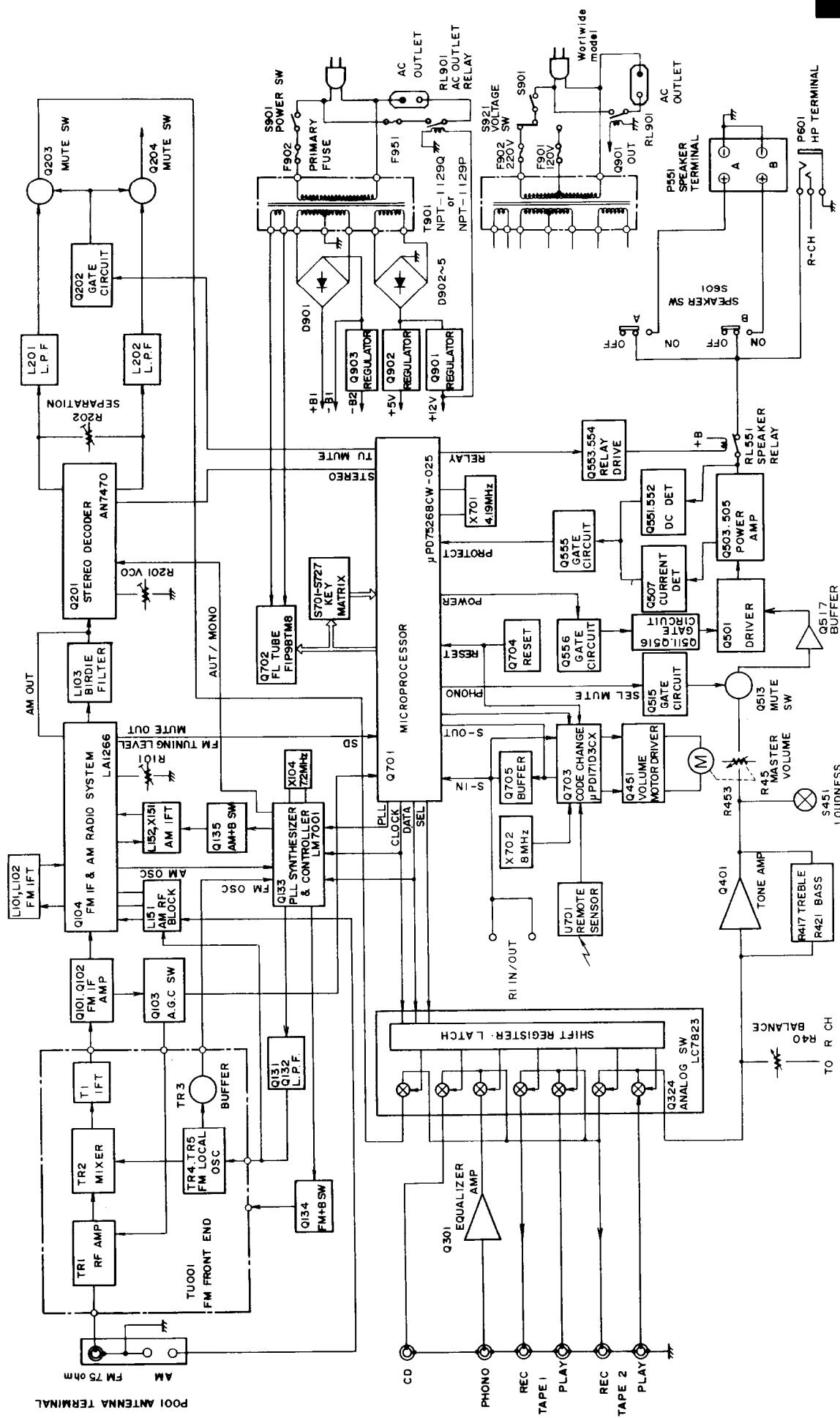
BLOCK DIAGRAM

MODEL TX-930

120V MODEL

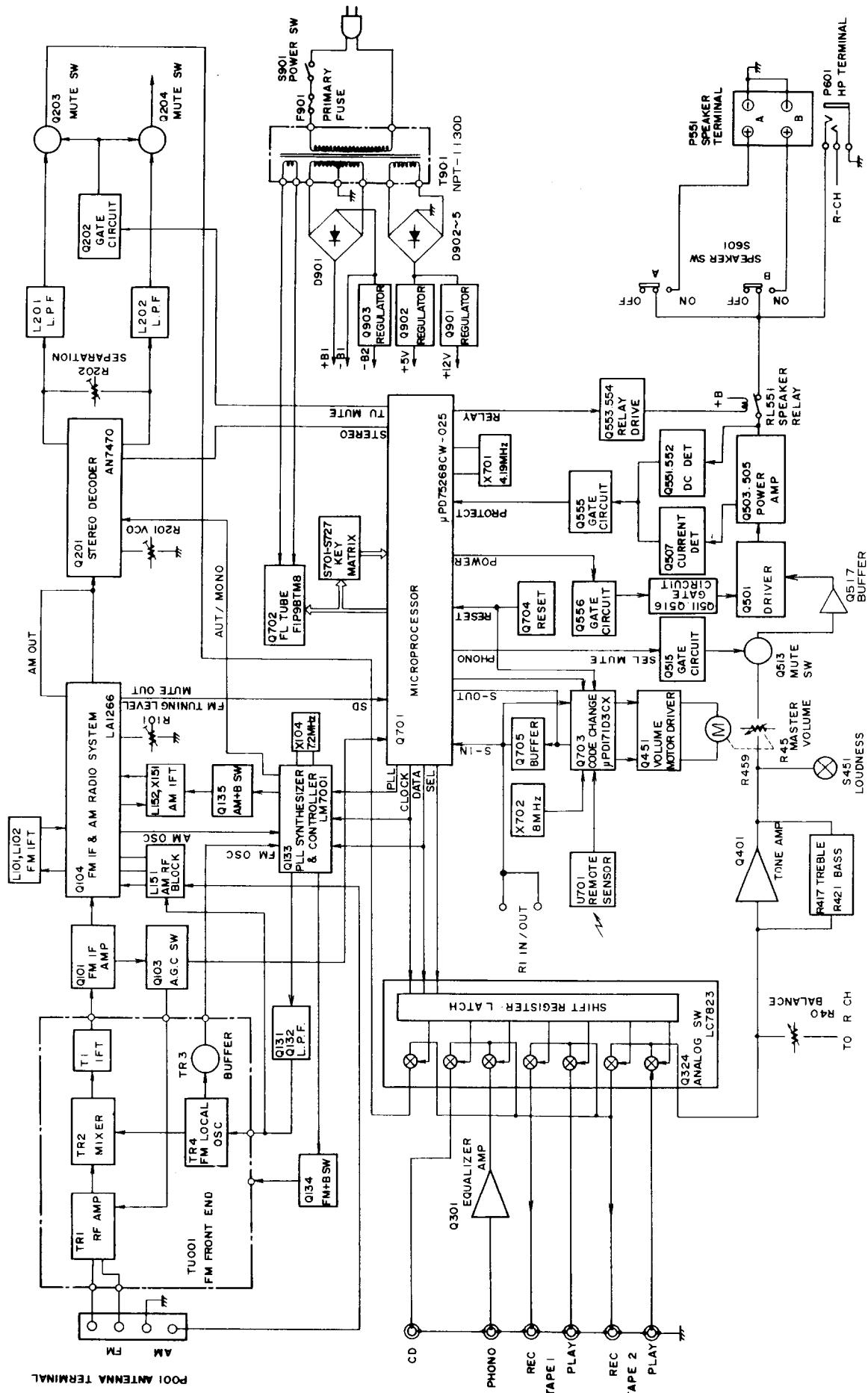


OTHER MODELS

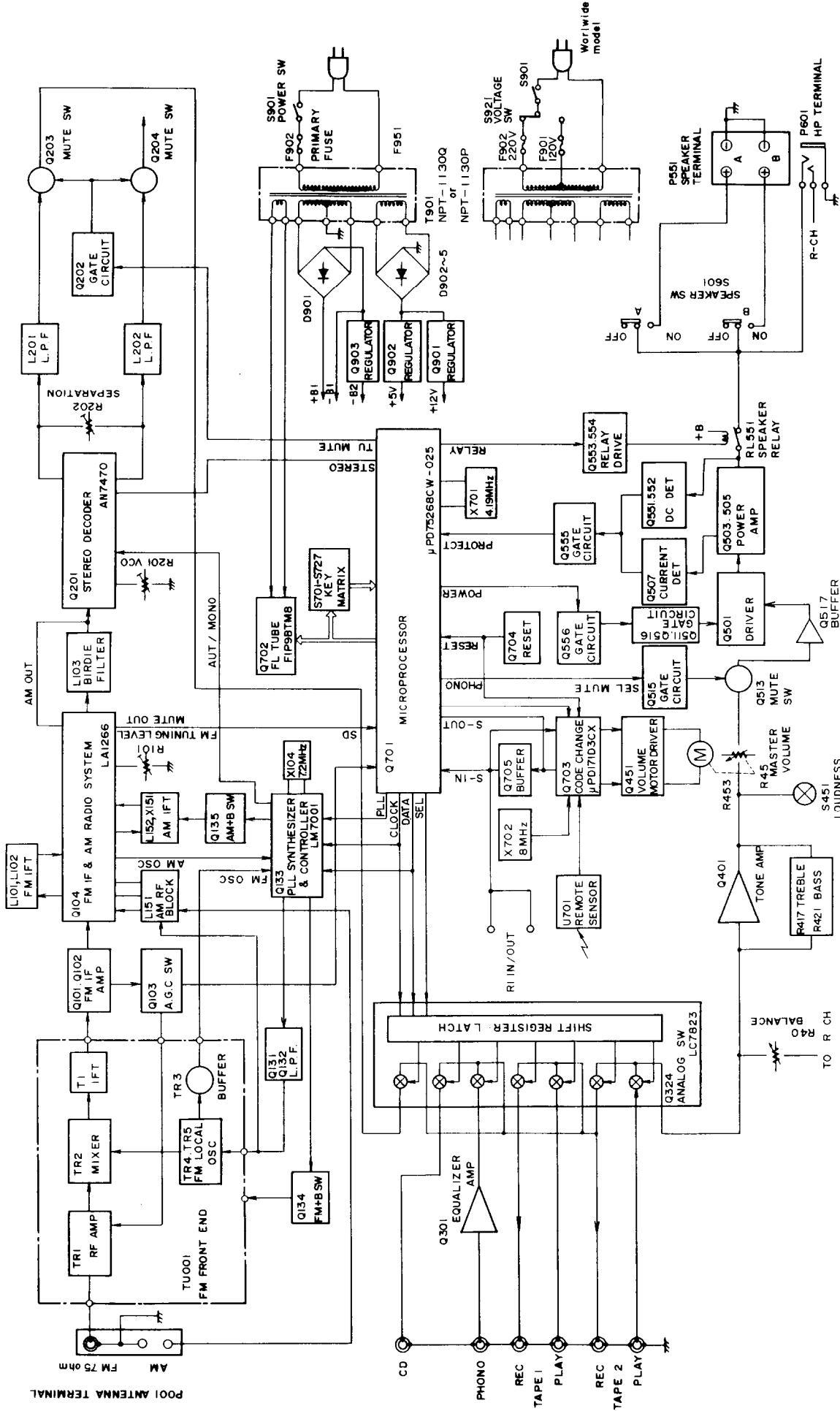


BLOCK DIAGRAM

MODEL TX-910 120V MODEL

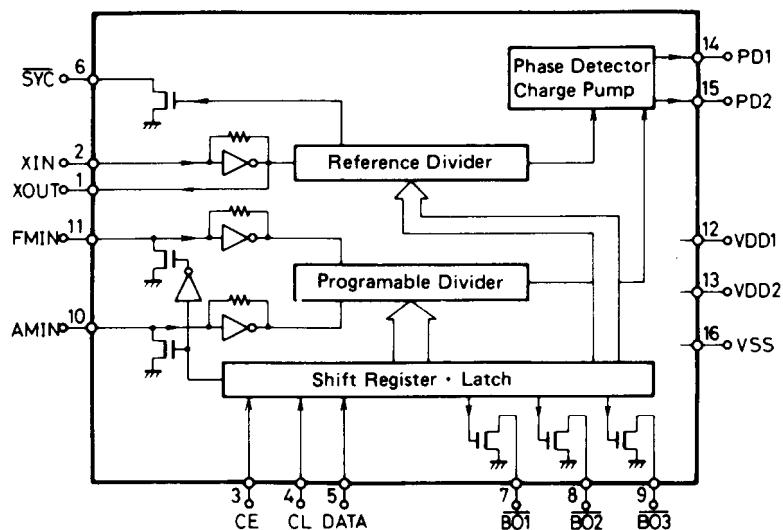


OTHER MODELS

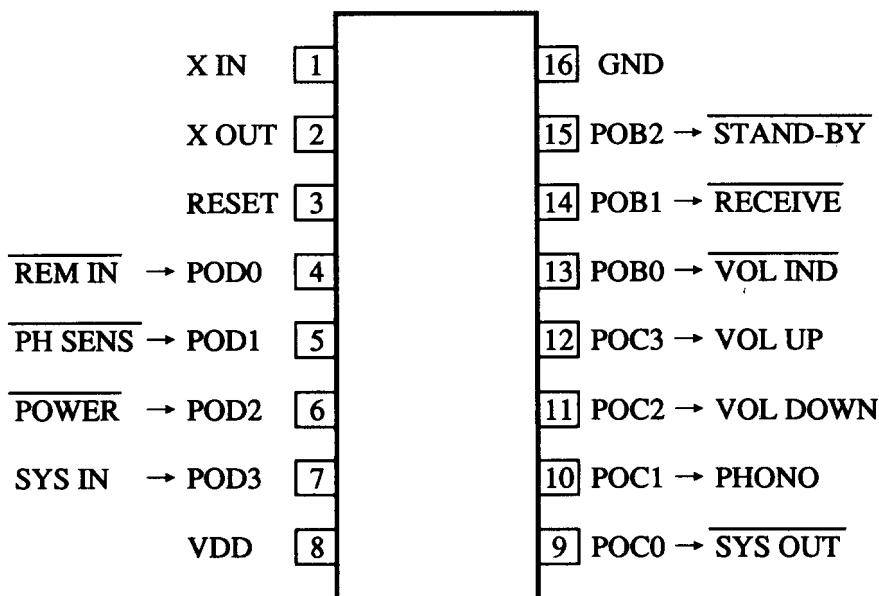
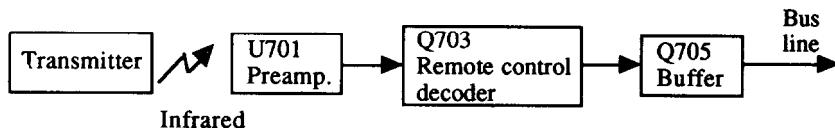


IC BLOCK DIAGRAM AND DESCRIPTION

LM7001(PLL synthesizer and controller)

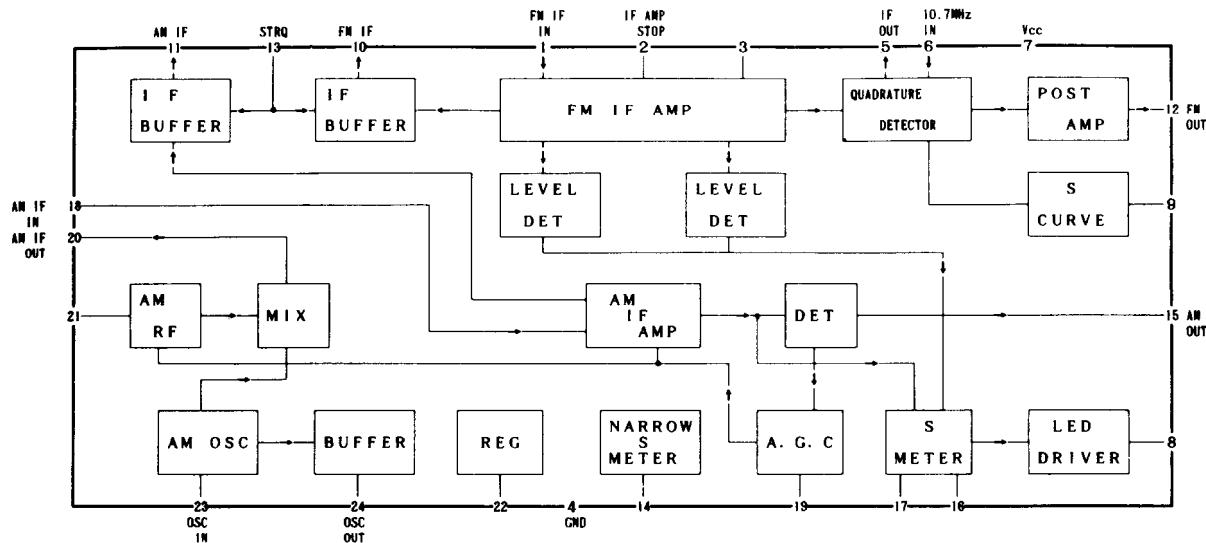


Pin No.	Terminal	Description
1	XOUT	
2	XIN	Connect to the 7.2 MHz crystal oscillator.
3	CE	Chip enable terminal. Connect to the PLL terminal of micro processor.
4	CL	Serial clock input terminal. Connect to the CLOCK terminal of micro processor.
5	DATA	Serial data input terminal. Connect to the DATA terminal of micro processor.
6	SYN	Not used.
7	AUT/MONO	Auto/Mono control output terminal. "H" when Auto.
8	BO2	FM control signal output terminal. "L" when FM.
9	BO3	AM control signal output terminal. "L" when AM.
10	AMIN	AM local oscillator input terminal.
11	FMIN	FM local oscillator terminal.
12	VDD 1	Power supply terminal for back-up.
13	VDD 2	Power supply terminal.
14	PD1	Charge pump output of the phase detector which constitutes the PLL. High level is output when the divided local oscillator frequency is high than the reference frequency.
15	PD2	In the opposite case, low level is output. Floating occurs when the frequencies matched. The output is applied to the variable capacitor diode in the local oscillator through the low pass filters.
16	Vss	Ground terminal.

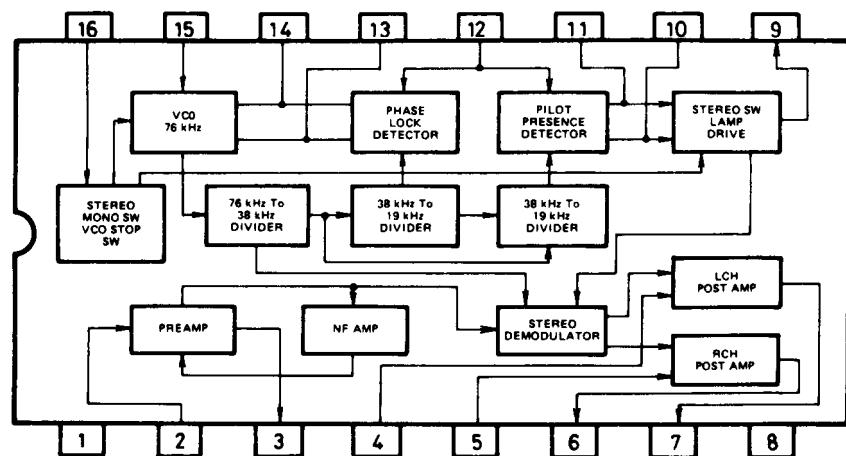
μ PD17103CX-528(Remote control decoder)

Pin No.	Symbol	Terminal	Description
1	XIN	OSC	Connect to the 8.00MHz ceramic oscillator.
2	XOUT		
3	RES	RESET	System reset terminal. Active low.
4	POD0	REMOTE IN	Signal input terminal from preamp. for remote control. Active low.
5	POD1	PHONO SENS	Phono detection input terminal. Active low.
6	POD2	POWER	Stand-by detection input terminal. During low input, only the POWER code is decoded.
7	POD3	SYS IN	System code input terminal.
8	V _{DD}	+B	Power supply terminal.
9	POC0	SYS OUT	Output at this terminal are the custom code (16bits) remote control code input to REMOTE IN, data code (8bits), and the serial code (12bits) that has been converted corresponding to the decoded data code (8bits)
10	POC1	PHONO	When the player PLAY/REEJECT is input, a high pulse of 200ms is output.
11	POC2	VOL DOWN	When the volume DOWN code is input, a high pulse of 120ms is output.
12	POC3	VOL UP	When the volume UP code is input, a high pulse of 120ms is output.
13	POB0	VOL IND	During the output of VOLUME UP/DOWN, a pulse (T T T T = 250ms) is output. (Not used.)
14	POB1	RECEIVE	This is the display output for remote control reception. Output is low when decoded code is being received.
15	POB2	STAND-BY	STAND-BY indication terminal.
16	V _{ss}	GND	Ground terminal.

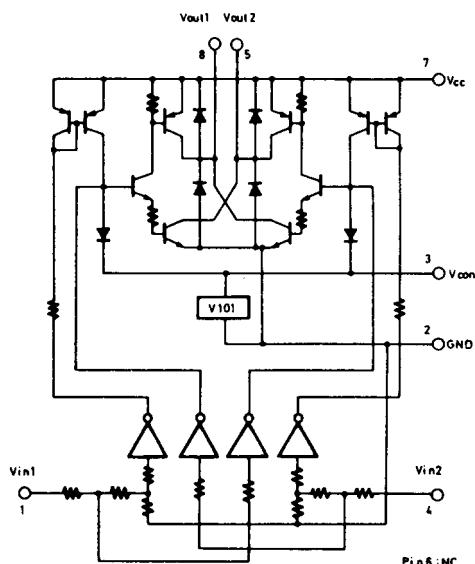
LA1266(FM IF and AM radio system)



AN7470(Stereo decoder)



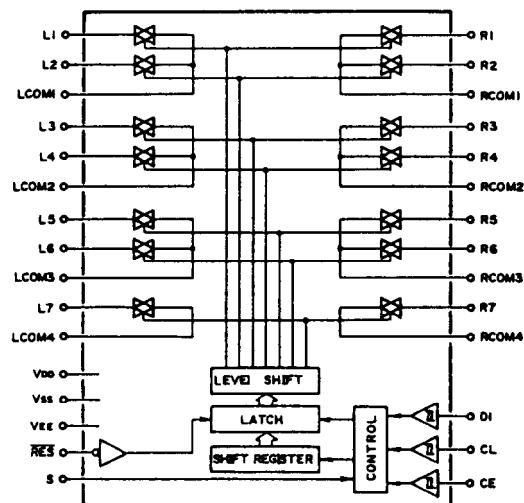
LB1630 (Motor driver)



TRUTH TABLE

IN 1	IN 2	OUT 1	OUT 2	MOTOR
H	L	H	L	Normal
L	H	L	H	Reverse
H	H	OFF	OFF	Wait
L	L	OFF	OFF	Wait

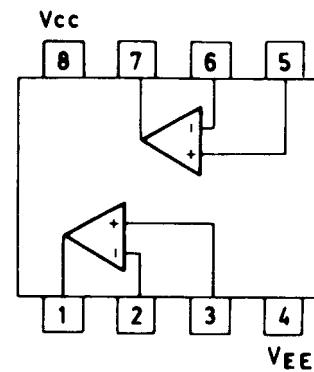
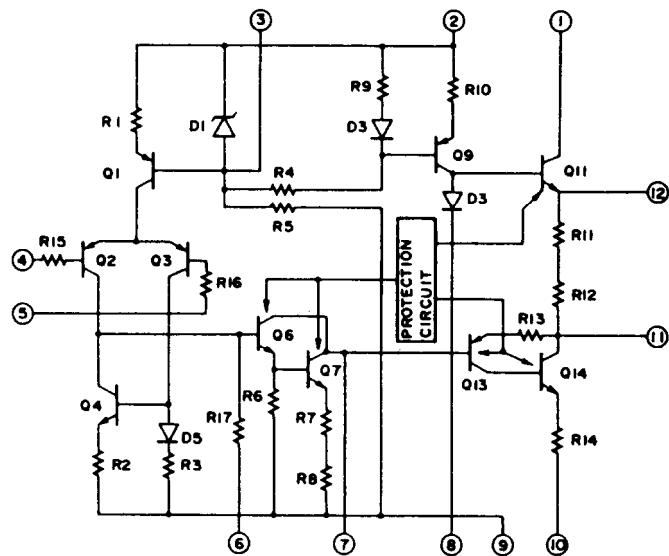
LC7823/LC7823N(Analog switch)



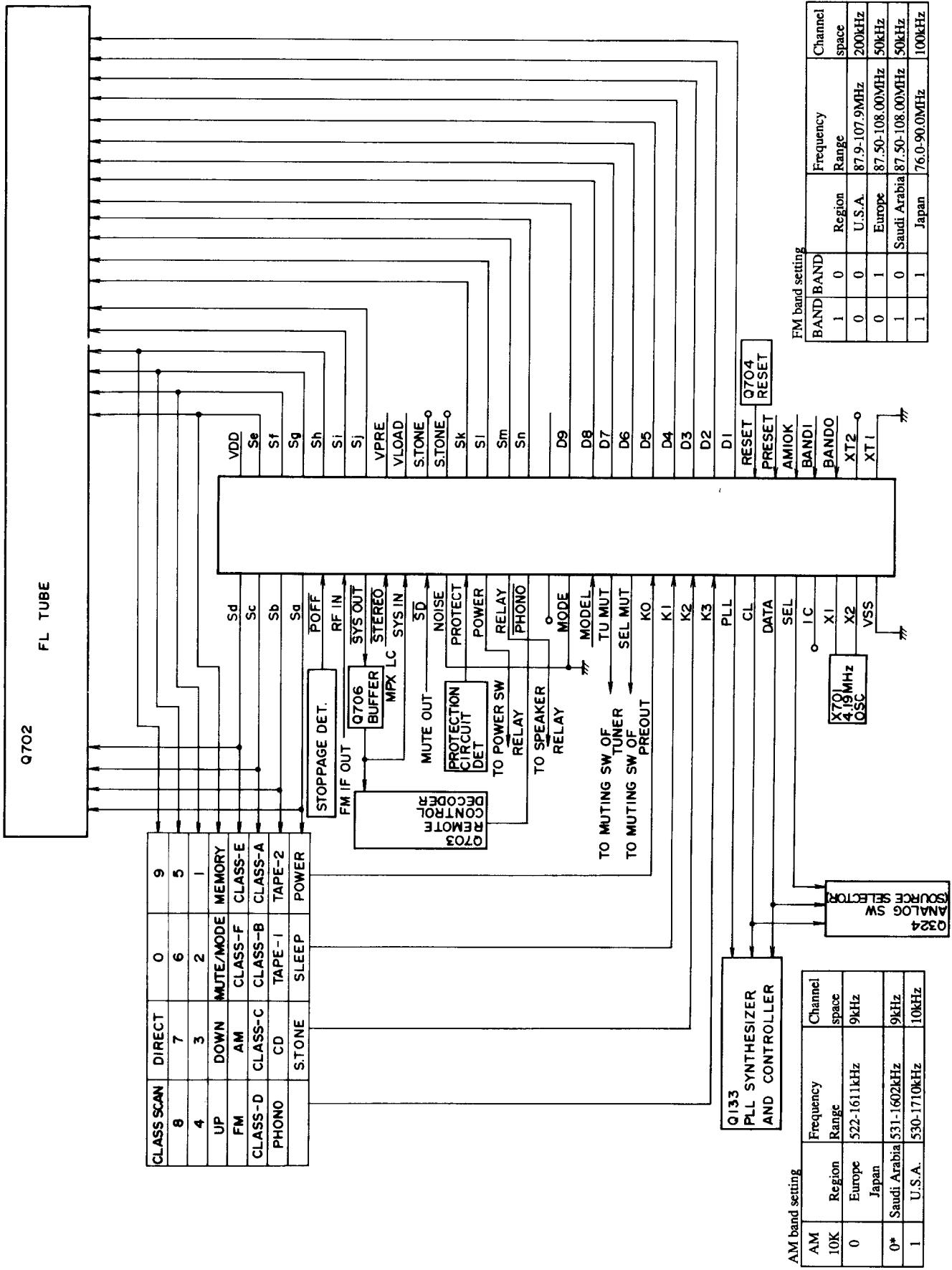
Pin No.	Terminal	Description
1,30	CD	On when the input selector is CD.
2,29	PHONO	On when the input selector is PHONO.
3,28	LCOM1,RCOM1	Common terminal.
4,27	TAPE-1 REC	Off when the input selector is TAPE-1.
5,26	TAPE-1 PB	On when the input selector is TAPE-1.
6,25	LCOM2,RCOM2	Common terminal.
7,24	TAPE-2 REC	Off when the input selector is TAPE-2.
8,23	TAPE-2 PB	On when the input selector is TAPE-2.
9,22	LCOM3,RCOM3	Common terminal.
10,21	TUNER	On when the input selector is TUNER.
11,20	LCOM4,RCOM4	Common terminal.
12	VEE	Negative power supply terminal.(-15V)
13	CE	Chip enable terminal. Connect to the terminal FUNC of the microprocessor.
14	DI	Serial data input terminal. Connect to the terminal DATA of the microprocessor.
15	CL	Serial clock terminal. Connect to the terminal CL of the microprocessor.
16	Vss	Ground terminal.
17	S	Select terminal.
18	RES	Reset terminal.
19	VDD	Power supply terminal.(+5V)

 μ PC1225H(Power amplifier driver)

NJM4558D-X (Operation amplifier)



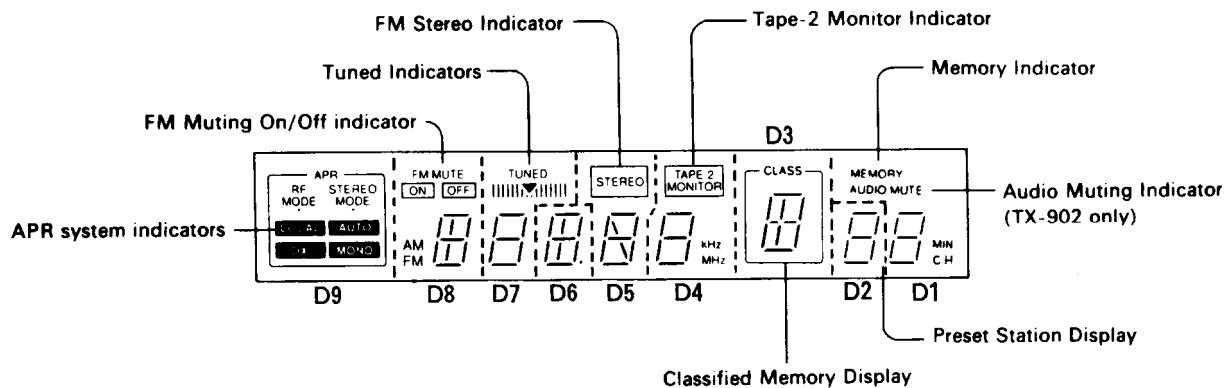
μ PD75268CW-025(Microprocessor)



Pin No.	Symbol	Description	Pin No.	Function	Description						
1	Sd	Segment and key scan output terminals. "H" when active.	29	IC	Internal connected.						
2	Sc		30	X1	Ceramic oscillator connection terminal for main system clock.						
3	Sb		31	X2	Connect to the 4.19MHz ceramic oscillator.						
4	Sa		32	VSS	Ground terminal.						
5	POFF	This is the input terminal for detection of the stoppage of electric current."L" when the stoppage of electric current.	33	X11	Ceramic oscillator connection terminal for sub system clock.						
6	RF IN	RF mode input terminal. <table border="1" data-bbox="399 1425 514 1700"><tr><td>RF IN</td><td>RF MODE</td></tr><tr><td>L</td><td>LOCAL</td></tr><tr><td>H</td><td>DX</td></tr></table>	RF IN	RF MODE	L	LOCAL	H	DX	34	XT2	Not used.
RF IN	RF MODE										
L	LOCAL										
H	DX										
7	SYS OUT/ SYS EN	System code output terminal."L" when active. Initializing input terminal when the power turns on.	35	BAND0	Initializing input terminal for region setting of FM band.						
8	STEREO	Stereo broadcast detection input terminal. "L" when stereo broadcast.	36	BAND1	Initializing input terminal for region setting of AM band.						
9	SYS IN	System code input terminal."H" when active.	37	AM 10K	Initializing input terminal for region setting of AM band.						
10	SD	Broadcast detection input terminal."L" when active. Control the stop of auto tuning and output TU MUT(#19).	41	PRESET	Initializing input terminal for operation mode setting.						
11	NOISE	Noise detection input terminal.Not used.	42	D3	Reset input terminal."L" when active.						
12	PROTECT	Protection circuit operation detection input terminal.	43	D4							
13	POWER	Power control output terminal.	44	D5	Digit output terminals."H" when active.						
14	RELAY	Speaker relay control output terminal.	45	D6							
15	PHONO	Phono control output terminal.	46	D7							
16		Not used.	47	D8							
17	MODE	Initializing input terminal for operation mode setting.	48	D9							
18	MODEL	Initializing input terminal for model setting of receiver.	49		Not used.						
19	TU MUT	Muting output terminal."H" when active.	50	Sn	Segment output terminals."H" when active.						
20	SEL MUT	Audio muting output terminal.Not used.	51	Sm							
21	K0		52	SI							
22	K1	Key scan input terminals. "H" when active.	53	Sk							
23	K2		54	S.TONE	SELECTIVE TONE indication output terminal.Not used.						
24	K3		55	S.TONE	SELECTIVE TONE control output terminal.Not used.						
25	PLL	Connect to the terminal CE of PLL IC (LM7001 Q133).	56	VLOAD	Pull-down resistor connection terminal of FIP controller/driver.						
26	CL	Connect to the terminal CL of PLL IC and analogue switch.	57	VPRE	Power supply terminal of output buffer of FIP controller/driver.						
27	DATA	Connect to the terminals DATA of PLL IC and analogue switch.	58	Si							
28	SEL	Analog switch control output terminal.	59	Si	Segment and key scan output terminals.						
		Connect to the terminal SEL of analogue switch(LC7823 Q324)	60	Sh	"H" when active.						
			61	Sg							
			62	Sf							
			63	Se							
			64	VDD	Power supply terminal.(+5V)						

Pin No.	Symbol	Description						
1	Sd	Segment and key scan output terminals. "H" when active.						
2	Sc							
3	Sb							
4	Sa							
5	POFF	This is the input terminal for detection of the stoppage of electric current."L" when the stoppage of electric current.						
6	RF IN	RF mode input terminal. <table border="1" data-bbox="399 1425 514 1700"><tr><td>RF IN</td><td>RF MODE</td></tr><tr><td>L</td><td>LOCAL</td></tr><tr><td>H</td><td>DX</td></tr></table>	RF IN	RF MODE	L	LOCAL	H	DX
RF IN	RF MODE							
L	LOCAL							
H	DX							
7	SYS OUT/ SYS EN	System code output terminal."L" when active. Initializing input terminal when the power turns on.						
8	STEREO	Stereo broadcast detection input terminal. "L" when stereo broadcast.						
9	SYS IN	System code input terminal."H" when active.						
10	SD	Broadcast detection input terminal."L" when active. Control the stop of auto tuning and output TU MUT(#19).						
11	NOISE	Noise detection input terminal.Not used.						
12	PROTECT	Protection circuit operation detection input terminal.						
13	POWER	Power control output terminal.						
14	RELAY	Speaker relay control output terminal.						
15	PHONO	Phono control output terminal.						
16		Not used.						
17	MODE	Initializing input terminal for operation mode setting.						
18	MODEL	Initializing input terminal for model setting of receiver.						
19	TU MUT	Muting output terminal."H" when active.						
20	SEL MUT	Audio muting output terminal.Not used.						
21	K0							
22	K1	Key scan input terminals. "H" when active.						
23	K2							
24	K3							
25	PLL	Connect to the terminal CE of PLL IC (LM7001 Q133).						
26	CL	Connect to the terminal CL of PLL IC and analogue switch.						
27	DATA	Connect to the terminals DATA of PLL IC and analogue switch.						
28	SEL	Analog switch control output terminal.						

FIP9BTM8(Fluorescent tube)

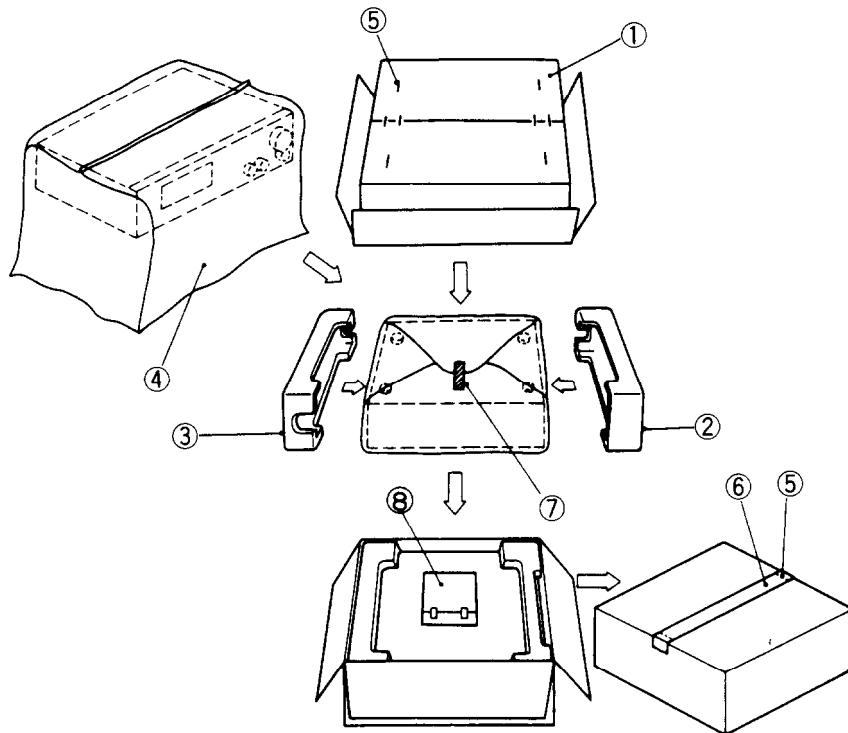


Terminal No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Electrode	F	F	NP	9G	NP	NP	NP	NP	NP	9G	NP	8G	NP	NP	8G	P(n)
Terminal No.	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Electrode	7G	7G	P(m)	6G	6G	P(l)	P(k)	5G	P(j)	P(i)	4G	P(h)	NP	4G	P(g)	
Terminal No.	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	
Electrode	3G	P(f)	P(e)	3G	P(a)	2G	2G	P(b)	1G	P(c)	P(d)	1G	NP	F	F	

Note: F:Filament
G:Grid
P:Anode
NP:No pin

	D9	D8	D7	D6	D5	D4	D3	D2	D1
Sa	APR	a	a	a	a	a	a	a	a
Sb	STEREO MODE	b	b	b	b	b	b	b	b
Sc	AUTO	c	c	c	c	c	c	c	c
Sd	MONO	d	d	d	d	d	d	d	d
Se	DX	e	e	e	e	e	e	e	e
Sf	LOCAL	f	f	f	f	f	f	f	f
Sg	RF MODE	g	g	g	g	g	g	g	g
Sh					h				
Si		i		i			i		
Sj		FM MUTE	TUNED		STEREO	TAPE-2	CLASS		MEMORY
Sk		ON	▼ (TUNED)				k		SLEEP
Sl		OFF							AUDIO MUTE
Sm		AM					kHz		MIN
Sn		FM					MHz		CH

PACKING VIEW



REF. NO.	PART NO.	Description
1	29052559Y	Master carton box <TX-930>
	29052561Y	Master carton box <S> <TX-930>
	29052563Y	Master carton box <TX-910>
	29052565Y	Master carton box <S> <TX-910>
2	29091440BY	Pad L
3	29091441BY	Pad R
4	29100034A	850×650,Styrene bag
5	282301	Staple
6	29110071	PP tape
7	261504	Adhesive tape
8	Accessory bag ass'y	
	29341795Y	Instruction manual <D>
	29341797Y	Instruction manual <P/W/Q/C>
	292111	FM antenna <D/W>
	292112	FM antenna <P/Q>
	29065462	FM antenna adaptor <W/Q>
	232140	NMA-3057,AM loop antenna
	25055040	CV-K-2,Conversion plug <W>
	3010054	UM-3,Two batteries
	24140223Y	RC-223S,Remote control transmitter
	2010200	Cord RI
	29100097	350×250,Styrene bag
	29365019A	Warranty card <N>
	28358002J	Service station list <N>
	29365024A	Warranty card <F>
	29100107	Styrene bag for warranty card <F>

NOTE: :Black model only
 <S>:Silver model only
 <D>:120V model only
 <P>:230V model only
 <W>:Worldwide model only
 <Q>:240V model only
 <N>:U.S.A. model only
 <F>:French model only
 <C>:Canadian model only

ADJUSTMENT PROCEDURES

Preparation

1. Input

FM mono: 1kHz, 75kHz devi., 60dB/ μ V

FM stereo: 1kHz, 75kHz devi., 60dB/ μ V

Pilot signal 19kHz 7.5kHz devi.

AM: 400Hz 30% mod.

2. Outputs

Connect the non-inductive type resistors of 8 ohms to the speaker terminals A unless otherwise noted.

3. Standard Knob Position

VOLUME.....Maximum

BASS/TREBLE/BALANCE.....Center

MUTING/LOUDNESS.....Off

INPUT SELECTOR.....CD

SPEAKERS.....A

Confirming Operation

1. Protection circuit

a. Speaker relay

The speaker relay turns on after the power switch turned on for 5 minutes.

The speaker relay turns off immediately after the power switch turns off.

b. Over-voltage confirmation

The speaker relay is off immediately after DC voltage $\pm 6V$ is applied to the terminal CD.

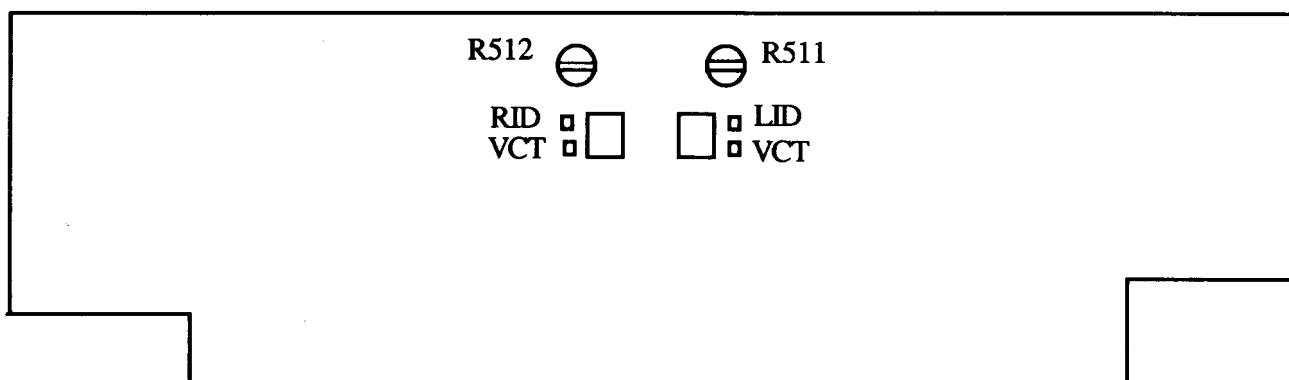
Amplifier section

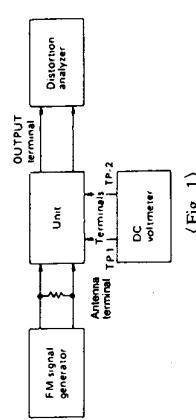
Idling Current Adjustment

Connect the DC voltmeter to the terminals LID(RID) and CT on the power amplifier pc board.

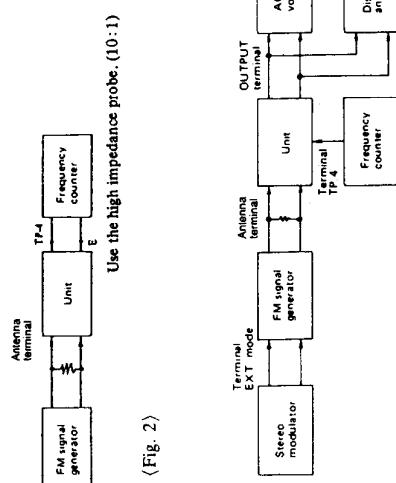
Adjust the semi-fixed resistor R511(R512) so that the indication of voltmeter is $5 \pm 0.5mV$.

Note: () : Right channel

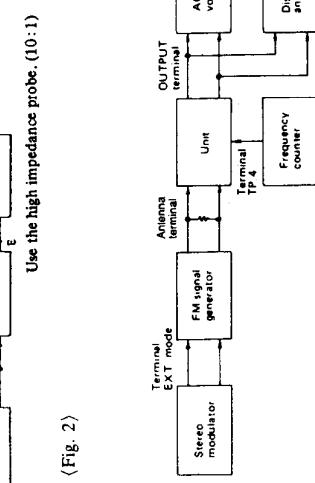




(Fig. 1)



(Fig. 2)



(Fig. 3)

Item	Step	Connection of instrument	FM SG output	Stereo modulator output	Tuned frequency	Output indicator	Adjustment point	Adjust for	Remarks
1 F	1	Fig. 1	99.1MHz 1kHz-75kHz devi. 65dB(60dB)	—	99.1MHz	DC voltmeter	L101	$0 \pm 20mV$	Set the FM mode switch to MONO. Repeat the steps 1 and 2 until no further adjustment is necessary.
	2	Fig. 1	99.1MHz 1kHz-75kHz devi. 65dB(60dB)	—	99.1MHz	Distortion analyzer	L102	Minimum	
V C O		Fig. 2	99.1MHz 65dB(60dB)	—	99.1MHz	Frequency counter	R201	$19kHz \pm 10Hz$	Set the FM mode switch to AUTO.
Stereo distortion		Fig. 3	99.1MHz Ext. modulation 65dB(60dB)	L+R 1kHz 67.5kHz devi.	99.1MHz	Distortion analyzer	IF on front end	Minimum	Set the FM mode switch to AUTO.
Tuned indicator	1	Fig. 3	99.1MHz 19.0dB(14dB)(120V model) 12dB (other models)	—	99.1MHz	TUNED indicator	R101	Light on	
level	2	Fig. 3	99.1MHz 1kHz-75kHz devi. 18.2dB(12dB) 11dB (other models)	—	99.1MHz	—	—	Light off	

(Fig. 1)

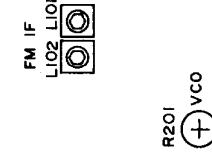
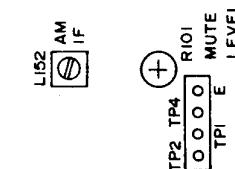
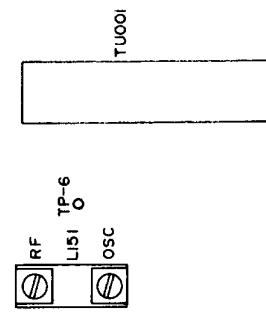
(Fig. 2)

(Fig. 3)

Step	AM SG output	Tuned Frequency	Output indicator	Adjustment point	Adjust for
1	—	522kHz (530kHz) (531kHz)	Digital DC voltmeter	OSC coil on RF block (L151)	$1.5V \pm 0.1V$
2	603kHz, 60dB/m (600kHz) 400Hz 30% mod.	603kHz (600kHz)	A C voltmeter	RF coil on RF block (L151)	Maximum
3	990kHz, 60dB/m 400Hz 30% mod.	990kHz	A C voltmeter	L152	Maximum

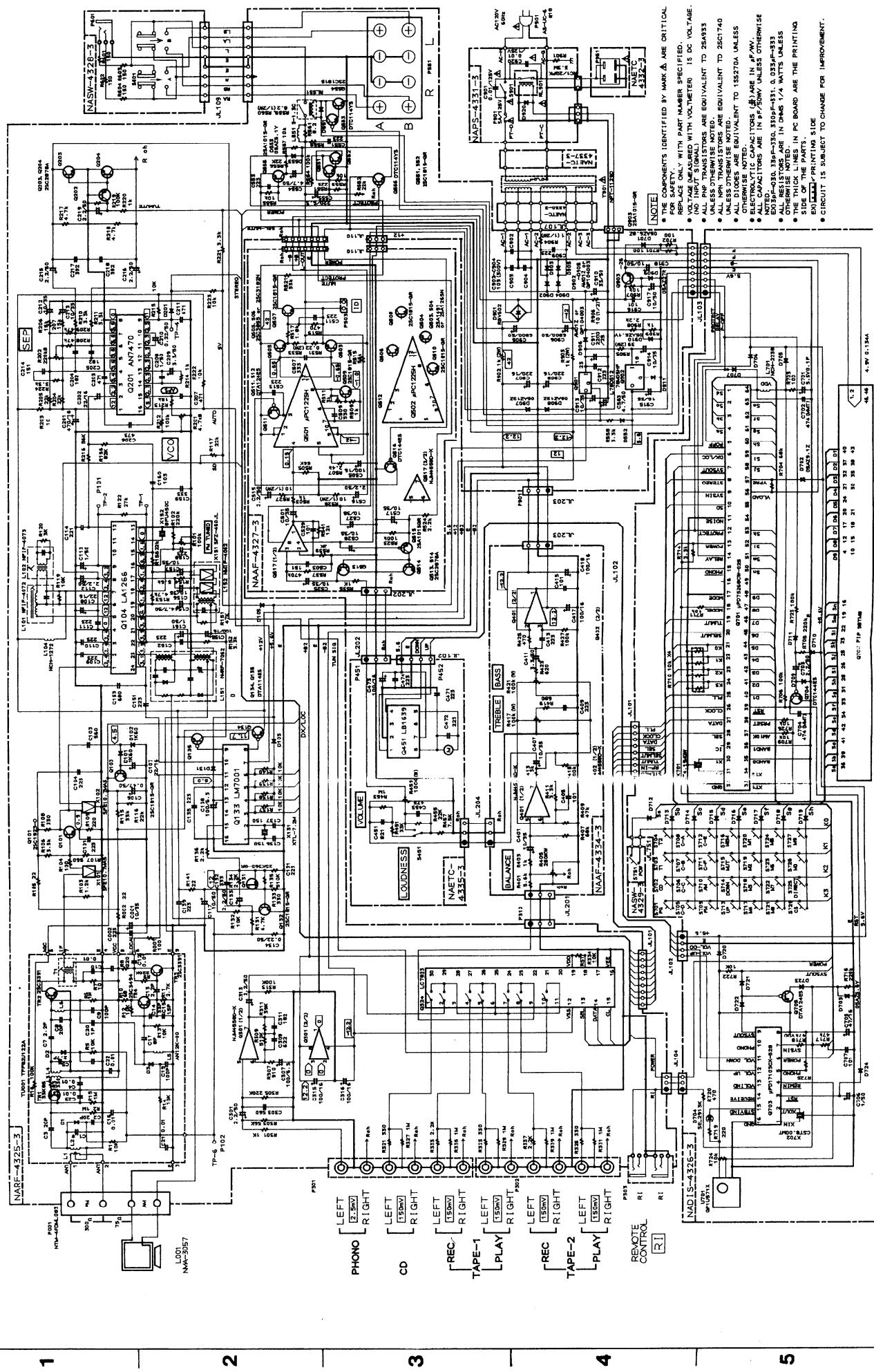
Note: ():120V model (<10kHz step)
< : Worldwide model

AM section



Schematic Diagram Model TX-930 (120V model)

SCHEMATIC DIAGRAM MODEL TX-930 (120V model)



ONHYO CORPORATION

TX-930

G

F

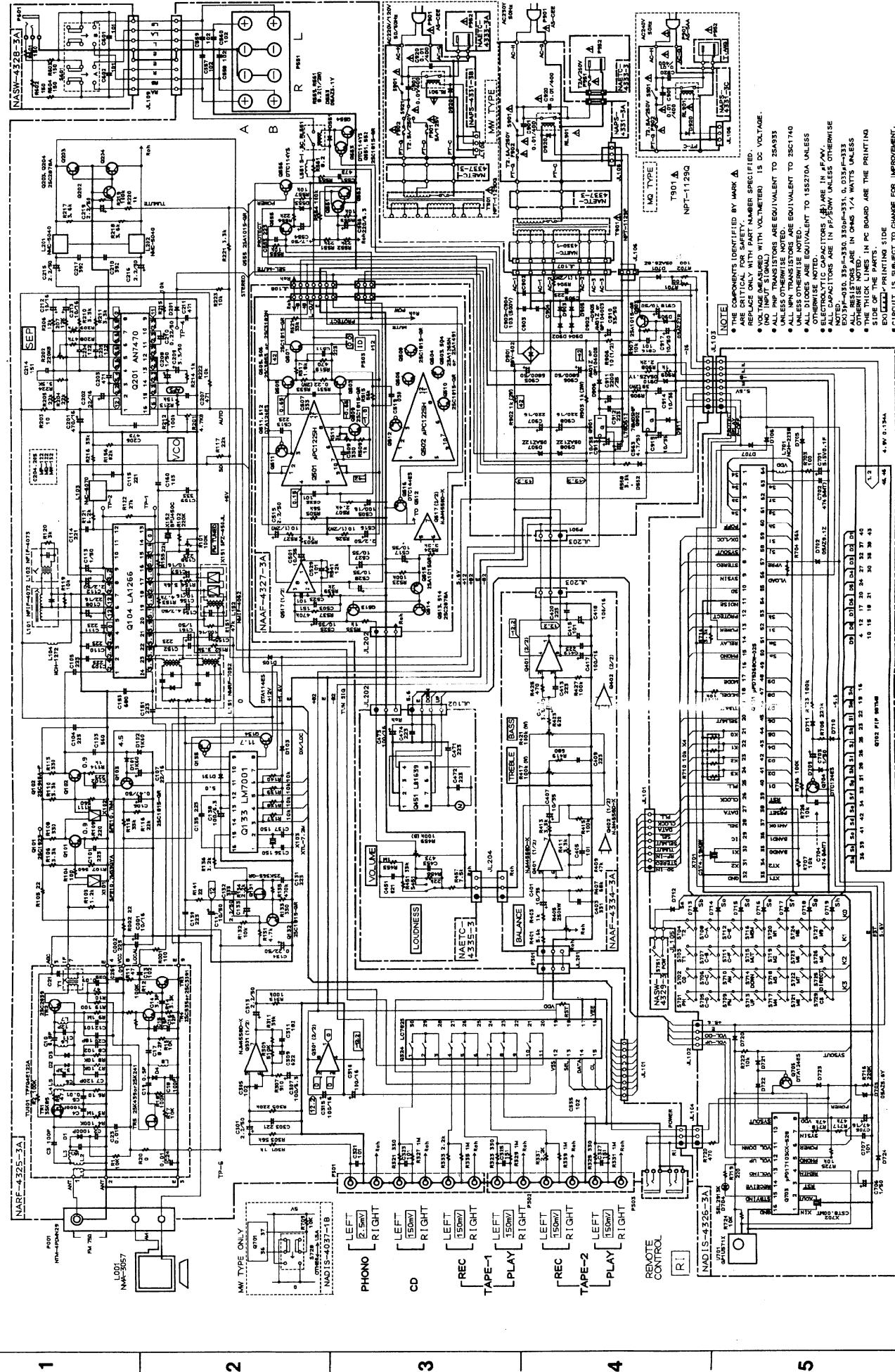
E

D

C

B

SCHEMATIC DIAGRAM MODEL TX-930 (Other models)

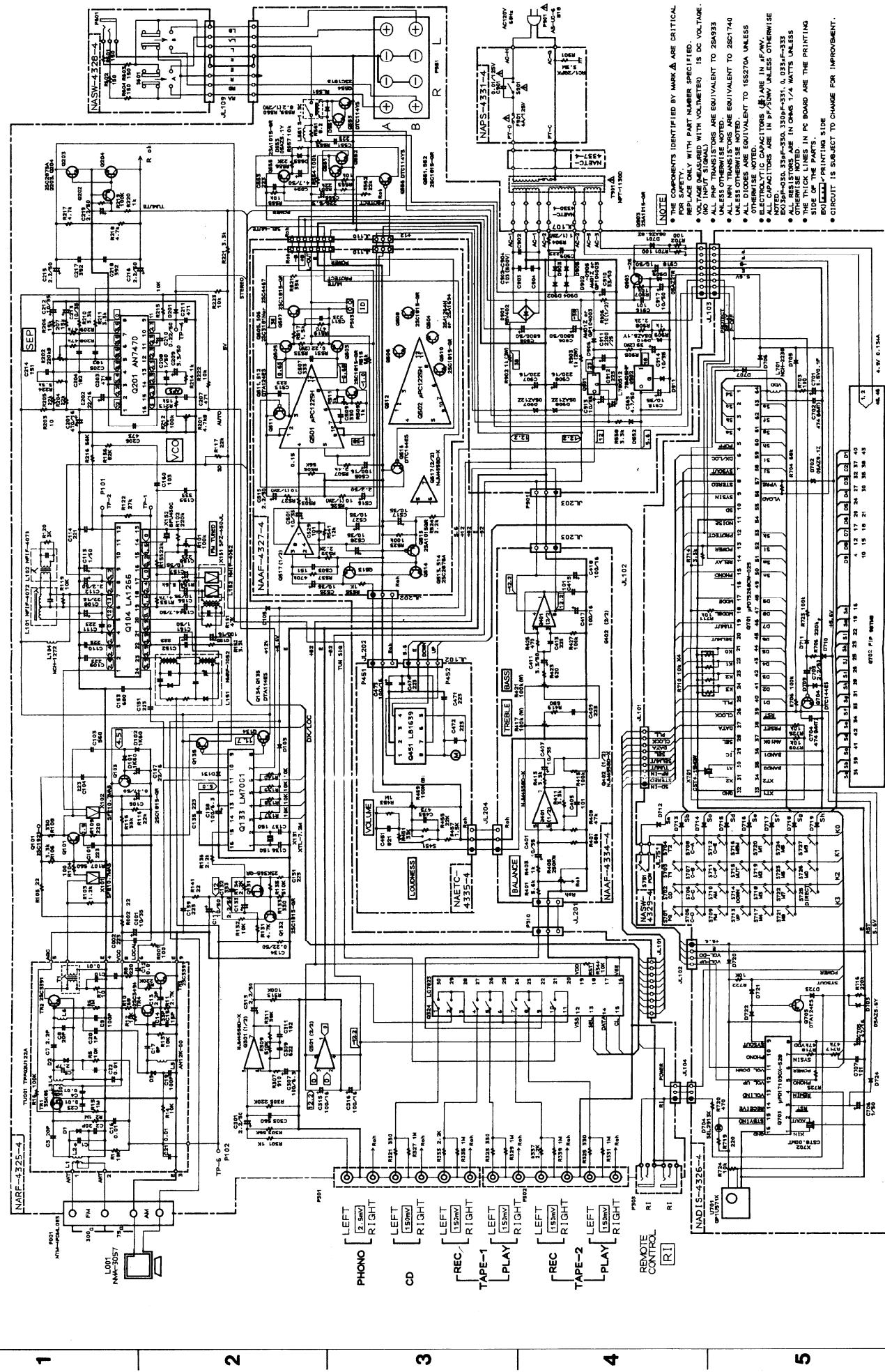


ONKYO CORPORATION

G
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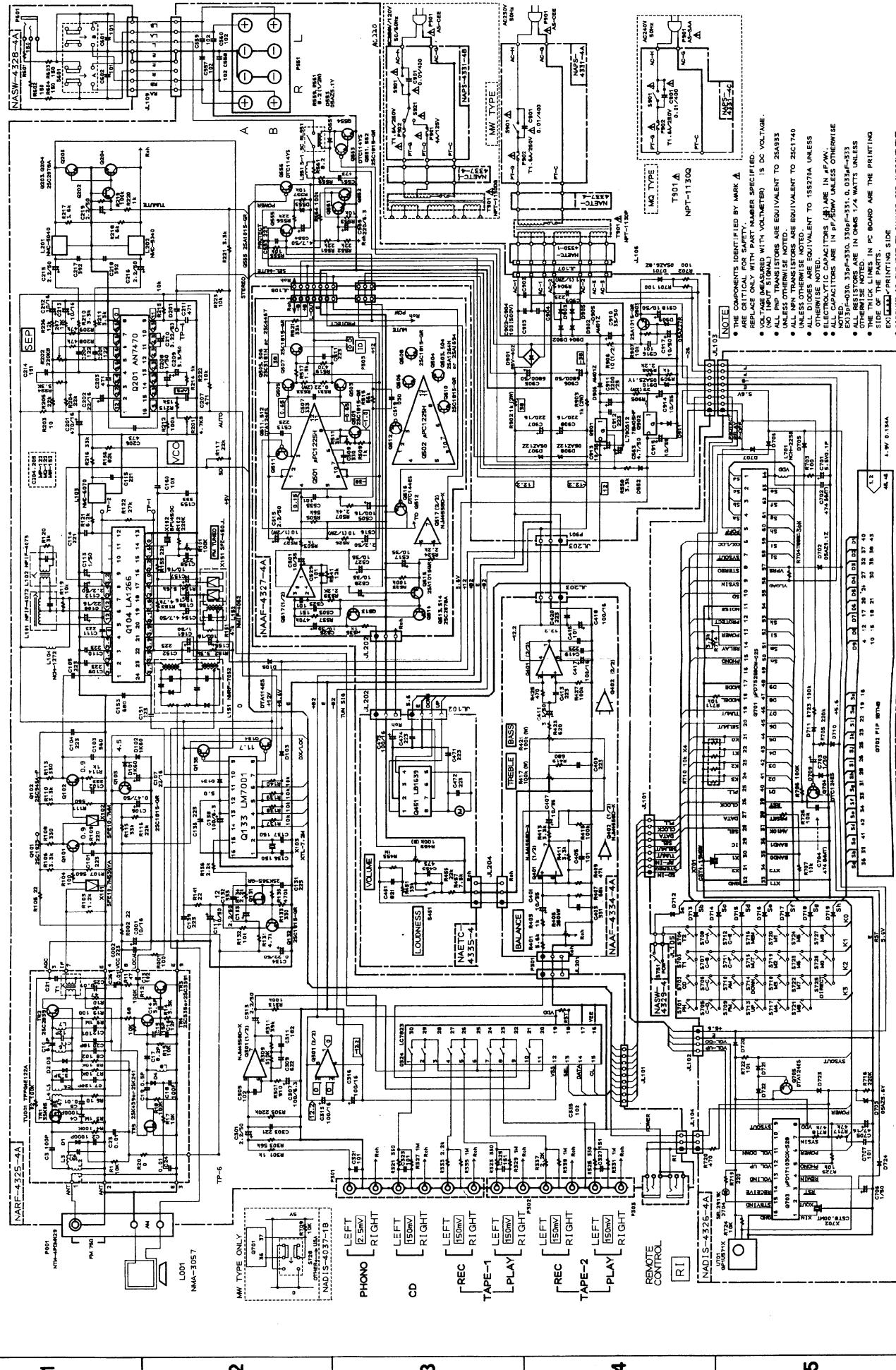
SCHEMATIC DIAGRAM

MODEL TX-910 (120V model)



SCHEMATIC DIAGRAM

MODEL TX-910 (Other models)



PRINTED CIRCUIT BOARD-PARTS LIST

MODEL TX-930

TUNER CIRCUIT PC BOARD (NARF-4325-3/3A/3B)

CIRCUIT NO.	PART NO.	DESCRIPTION	CIRCUIT NO.	PART NO.	DESCRIPTION
	Front end			Ceramic filters	
TU001	240084	TFFG2U122A <D>	X101,X102	3010071	SFE10.7MA5 <D>
	240085	TFFG4E122A <P/W/Q>	X101	3010081	SFE10.7MS3GYA <P/W/Q>
	ICs		X102	3010137	SFE10.7MMK <P/W/Q>
Q104	22240039	LA1266	X151	3010123	SFZ450JL
Q133	22240090	LM7001	X152	3010076	BFU450C
Q201	22240242	AN7470		Capacitors	
Q301	222502	NJM4558D-X	C001	354761009	10 μ F,35V,Elect.
Q324	22240158 or 22240339	LC7823 or LC7823N	C106	354784799	0.47 μ F,50V,Elect.
Q901	222780126	L78OS12	C107,C108	354742209	22 μ F,16V,Elect.
Q902	222780055	78M05HF	C112	354780229	2.2 μ F,50V,Elect.
	Transistors		C113,C161	354780109	1 μ F,50V,Elect.
Q101	2211723	2SC1923-O	C117	354781009	10 μ F,50V,Elect.
Q102	2210746	2SC945A-P <P/W/Q>	C131	374722234	0.022 μ F \pm 5%,50V,Plastic
Q103,Q132	2211255	2SC1815-GR	C132	374723334	0.033 μ F \pm 5%,50V,Plastic
Q131	2212445	2SK365-GR	C133	354780229	2.2 μ F,50V,Elect.
Q134,Q135	2213510	DTA114ES	C134	354782299	0.22 μ F,50V,Elect.
Q202	2211455	2SA1015-GR	C138	354721019	100 μ F,6.3V,Elect.
Q203,Q204	2212285	2SC2878-A	C154	354780479	4.7 μ F,50V,Elect.
Q551,Q552	2211255	2SC1815-GR	C155	354741019	100 μ F,16V,Elect.
Q553,Q556	221281	DTC114YS	C156,C157	354761009	10 μ F,35V,Elect.
Q554	2211255	2SC1815-GR	C159	374723334	0.033 μ F \pm 5%,50V,Plastic
Q555,Q903	2211455	2SA1015-GR	C160	374721034	0.01 μ F \pm 5%,50V,Plastic
	Diodes		C201	354744719	470 μ F,16V,Elect.
D101,D102	223132	1K60	C202	354742209	22 μ F,16V,Elect.
D103,D105	223205 or	1SS270A or	C204,C205	374721824	1800pF \pm 5%,50V,Plastic <D>
D131,D201	223163	1SS133		374721224	1200pF \pm 5%,50V,Plastic <P/Q>
D551,D552	223205 or	1SS270A or		374721524	1500pF \pm 5%,50V,Plastic <W>
D911	223163	1SS133	C206	374724734	0.047 μ F \pm 5%,50V,Plastic
D553,D910	224150512	05AZ5.1Y	C207	370134714	470pF \pm 5%,100V,Plastic
D701	224150683	05AZ6.8Z	C208	354780109	1 μ F,50V,Elect.
D901	22380038	RBV602	C209	354780339	3.3 μ F,50V,Elect.
D902-D906	22380035 or 22380046	GP104003 or AM01Z	C210	354782299	0.22 μ F,50V,Elect.
D907,D908	224151203	05AZ12Z	C212,C213	354761009	10 μ F,35V,Elect.
D909	224152704	05AZ27R	C215,C216	354780229	2.2 μ F,50V,Elect.
	Coils and Transformers		C217,C218	374723924	3900pF \pm 5%,50V,Plastic
L101	233401	NFIF-4072	C219	354780229	2.2 μ F,50V,Elect.
L102	233402	NFIF-4073	C301,C302	354780229	2.2 μ F,50V,Elect.
L103	233383	NMC-6070 <P/W/Q>	C307,C308	354721019	100 μ F,6.3V,Elect.
L104	233409M022	NCH-1272	C309,C310	374726224	6200pF \pm 5%,50V,Plastic
L151	232152	NMRF-7052,RF block	C311,C312	374721824	1800pF \pm 5%,50V,Plastic
L152	232139	NMIF-4062	C313,C314	354780229	2.2 μ F,50V,Elect.
L201,L202	233294	NMC-5040 <P/W/Q>	C315,C316	354741019	100 μ F,16V,Elect.
L551,L552	231176	S-1.3C	C551,C552	374724734	0.047 μ F \pm 5%,50V,Plastic
	Resonator		C554,C563	354780479	4.7 μ F,50V,Elect.
X103	3010158 or 3010141	XTL-7.2M or XTL-7.2M,Crystal	C555	354722219	220 μ F,6.3V,Elect.
			C905,C906	3504207	6800 μ F,50V,Elect.
			C907,C908	354742219	220 μ F,16V,Elect.
			C910	354783309	33 μ F,50V,Elect.
			C911	354752229	2200 μ F,25V,Elect.
			C913-C915	354761009	10 μ F,35V,Elect.
			C917,C918	354781009	10 μ F,50V,Elect.

CIRCUIT NO.	PART NO.	DESCRIPTION	CIRCUIT NO.	PART NO.	DESCRIPTION
	Resistors			Capacitors	
R101	5210221 or 5210070	N06HR100KBD, Trim	C701	3000057 or 3000068	0.1F,5.5V or 0.047F,5.5V,Super
R201	5210216 or 5210062	N06HR5KBD or N06HR4.7KBD,Trim	C702,C704	375524744	0.47 μ F \pm 5%,50V,Plastic
R559,R560	452530824	8.2 ohm \pm 5%,1/2W,Metal	C703	353780229	2.2 μ F,50V,Elect.
R902,R903	441721024	1 kohm \pm 5%,2W,Metal	C705	353744709	47 μ F,16V,Elect.
R904	452530104	1 ohm \pm 5%,1/2W,Metal	C706	353780109	1 μ F,50V,Elect.
R905	441723904	39 ohm \pm 5%,2W,Metal	R710	49163103404	10 kohm \times 4,1/10W,Array
R906	441721004	10 ohm \pm 5%,1/2W,Metal		S701-S727	Switches
	Terminals			25035548	NPS-111-S510
P001	25060157 25060117	NTM-4PDML083,Antenna <D> NTM-2PDML051,Antenna <P/W/Q>	S728	25065286	NSS22112 <W>
P301,P302	25045323	NPJ-6PDBL180	S729	25035548	NPS-111-S510
P303	25045172	HSJ1003-01-020		27190810	Holders
P551	25060158	NTM-8PDML084,Speaker		27190811	FL
RL551	25065339	NRL-2P5A-DC24-046		27190811	LED
	Sockets				
P310,P901	25050267	NSCT-3P95			
	Radiators				
R1	27160176	RAD56	Q501,Q502	22240108	μ PC1225H
R2	27160145	RAD51	Q517	222502	NJM4558D-X
R3	27160166		Q503,Q504	2201693, 2201694, 2201696, 2202282 or 2202283	* 2SA1491-O, * 2SA1491-Y, * 2SA1491-P, * 2SA1265N-R or * 2SA1265N-O
				2201703, 2201704, 2201706, 2202292 or 2202293	* 2SC3855-O, * 2SC3855-Y, * 2SC3855-P, * 2SC3812N-R or * 2SC3812N-O
				2211255	2SC1815-GR
			Q507-Q510	2212600	DTA124ES
			Q511,Q512	2212285	2SC2878-A
			Q513,Q514	2211455	2SA1015-GR
			Q515	221282	DTA124ES
			Q516		
D702	224150913	05AZ9.1Z			
D703	224150562	05AZ5.6Y	C501,C502	354761009	10 μ F,35V,Elect.
D704	225142	SEL2913K,LED	C505,C506	354741019	100 μ F,16V,Elect.
D705-D707	223163 or	1SS133 or	C507,C508	374723334	0.033 μ F \pm 5%,50V,Plastic
D709-D724	223205	1SS270A	C515,C516	354780229	2.2 μ F,50V,Elect.
	Resonators		C517	354761009	10 μ F,35V,Elect.
X701	3010163	CST4.19MGW,Ceramic	C525-C528	354761009	10 μ F,35V,Elect.
X702	3010154 or 3010190	CST8.00MT or CST8.00HSW,Ceramic			
	Coil		R511,R512	5215061	N08HR3KBC,Trim
L701	233400M220 or 233409K220	NCH-2238 or NCH-1284	R526,R527	442521004	10 ohm,1/2W,Metal oxide film
			R531-R534	4500005	BPR2FK-0.22,Metal plate
				Plugs	
			P503,P504	25055495	NPLG-2P470

HEADPHONE TERMINAL PC BOARD (NASW-4328-3/3A)

CIRCUIT NO.	PART NO.	DESCRIPTION
S601	25035517	NPS-222-L479,Push switch
P601	25045255	YKB21-5009,Headphone terminal

POWER SWITCH PC BOARD (NASW-4329-3)

CIRCUIT NO.	PART NO.	DESCRIPTION
S751	25035548	NPS-111-S510,Power switch

POWER SUPPLY CIRCUIT PC BOARD (NAPS-4331-3/3A/3B/3C)

CIRCUIT NO.	PART NO.	DESCRIPTION
D920	223163 or	1SS133 or
	223205	1SS270A,Diode
C901,C920	3500065A	△ DE7150FZ103PAC400V/125V, Capacitor IS
C901A	27301216	△ Cover for C901 <P/W/Q>
R901	431523355	△ 3.3 Mohm,1/2W,Solid resistor <D>
S901	25035550	△ NPS-111-L512P,Power switch
F901	252050	△ 5A(ST-6),Primary fuse <D/W>
F901a	250113	△ SN5051,Fuseholders <D/W>
F902	252075	△ 2.5A-SE-EAK,Primary fuse <P/W/Q>
F902a	25050065	△ YSH403T,Fuseholders <P/W/Q>
RL901	25065269	△ NRL-1P5ADC12-36,Relay <D>
	25065248	△ NRL-1P15ADC12-29,Relay <P/W/Q>
P902	25050267	NSCT-3P95,Socket

AC OUTLET TERMINAL PC BOARD (NAETC-4332-3)

(120 V model only)

CIRCUIT NO.	PART NO.	DESCRIPTION
P951	25050409	△ NSCT-4P234,AC outlet

AC OUTLET TERMINAL PC BOARD (NAETC-4333-3/3A)

(230 V and Worldwide models only)

CIRCUIT NO.	PART NO.	DESCRIPTION
P952	25050410	△ NSCT-2P235,AC outlet
F951	252047	△ 2A-SE-EAK,Fuse <P>
F951a	25050065	△ YSH-403T,Fuseholders <P>

TONE CONTROL CIRCUIT PC BOARD (NAAF-4334-3/3A)

CIRCUIT NO.	PART NO.	DESCRIPTION
		IC
Q401,Q402	222502	NJM4558D-X
		Capacitors
C401,C402	354761009	10 μ F,35V,Elect.
C407,C408	354761009	10 μ F,35V,Elect.
C409,C410	374722234	0.022 μ F \pm 5%,50V,Plastic
C411,C412	354780339	3.3 μ F,50V,Elect.
C413,C414	374722234	0.022 μ F \pm 5%,50V,Plastic
C417,C418	354741019	100 μ F,16V,Elect.
		Resistors
R405,R406	5104225	N11RLC250KWT22Z, Balance,variable
R417,R418	5104230	N14RLC100KWT22Z,Treble,variable
R421,R422	5104230	N14RLC100KWT22Z,Bass,variable

VOLUME CONTROL CIRCUIT PC BOARD (NAETC-4335-3)

CIRCUIT NO.	PART NO.	DESCRIPTION
Q451	22240322	LB1639,IC
C453,C454	374724734	0.047 μ F \pm 5%,50V,Plastic capacitor
C473	354741019	100 μ F,16V,Elect. capacitor
R459,R460	5104243	N16RGM100KBTP25F,Volume, variable resistor
S451	25035609	NPS-122-L571,Loudness switch
P451	25050267	NSCT-3P95,Socket
P452	25050268	NSCT-4P96,Socket

VOLTAGE SELECTOR SWITCH PC BOARD (NASW-4338-3)

(Worldwide model only)

CIRCUIT NO.	PART NO.	DESCRIPTION
S902	25065287	△ NSS-22113P,Voltage selector switch

NOTE: <D>:120 V model only

<P>:230 V model only

<W>:Worldwide model only

<Q>:240 V model only

CAUTION: Replacement for transistor of mark *, if necessary, must be made from the same beta group (H FE) as the original type.

NOTE: THE COMPONENTS IDENTIFIED BY MARK △ ARE CRITICAL FOR RISK OF FIRE AND ELECTRIC SHOCK. REPLACE ONLY WITH PART NUMBER SPECIFIED.

PRINTED CIRCUIT BOARD-PARTS LIST

MODEL TX-910

TUNER CIRCUIT PC BOARD (NARF-4325-4/4A/4B)

CIRCUIT NO.	PART NO.	DESCRIPTION	CIRCUIT NO.	PART NO.	DESCRIPTION
		Front end			Ceramic filters
TU001	240084	TFFG2U122A <D>	X101,X102	3010071	SFE10.7MA5 <D>
	240085	TFFG4E122A <P/W/Q>	X101	3010081	SFE10.7MS3GYA <P/W/Q>
		ICs	X102	3010137	SFE10.7MMK <P/W/Q>
Q104	22240039	LA1266	X151	3010123	SFZ450JL
Q133	22240090	LM7001	X152	3010076	BFU450C
Q201	22240242	AN7470			Capacitors
Q301	222502	NJM4558D-X	C001	354761009	10 μ F,35V,Elect.
Q324	22240158 or 22240339	LC7823 or LC7823N	C106	354784799	0.47 μ F,50V,Elect.
Q901	222780126	L78OS12	C107,C108	354742209	22 μ F,16V,Elect.
Q902	222780055	78M05HF	C112	354780229	2.2 μ F,50V,Elect.
		Transistors	C113,C161	354780109	1 μ F,50V,Elect.
Q101	2211723	2SC1923-O	C117	354781009	10 μ F,50V,Elect.
Q102	2210746	2SC945A-P <P/W/Q>	C131	374722234	0.022 μ F \pm 5%,50V,Plastic
Q103,Q132	2211255	2SC1815-GR	C132	374723334	0.033 μ F \pm 5%,50V,Plastic
Q131	2212445	2SK365-GR	C133	354780229	2.2 μ F,50V,Elect.
Q134,Q135	2213510	DTA114ES	C134	354782299	0.22 μ F,50V,Elect.
Q202	2211455	2SA1015-GR	C138	354721019	100 μ F,6.3V,Elect.
Q203,Q204	2212285	2SC2878-A	C154	354780479	4.7 μ F,50V,Elect.
Q551,Q552	2211255	2SC1815-GR	C155	354741019	100 μ F,16V,Elect.
Q553,Q556	221281	DTC114YS	C156,C157	354761009	10 μ F,35V,Elect.
Q554	2211255	2SC1815-GR	C159	374723334	0.033 μ F \pm 5%,50V,Plastic
Q555,Q903	2211455	2SA1015-GR	C160	374721034	0.01 μ F \pm 5%,50V,Plastic
		Diodes	C201	354744719	470 μ F,16V,Elect.
D101,D102	223132	1K60	C202	354742209	22 μ F,16V,Elect.
D103,D105	223205 or	ISS270A or	C204,C205	374721824	1800pF \pm 5%,50V,Plastic <D>
D131,D201	223163	ISS133		374721224	1200pF \pm 5%,50V,Plastic <P/Q>
D551,D552	223205 or	ISS270A or		374721524	1500pF \pm 5%,50V,Plastic <W>
D911	223163	ISS133	C206	374724734	0.047 μ F \pm 5%,50V,Plastic
D553,D910	224150512	05AZ5.1Y	C207	370134714	470pF \pm 5%,100V,Plastic
D701	224150683	05AZ6.8Z	C208	354780109	1 μ F,50V,Elect.
D901	22380022	RBV402	C209	354780339	3.3 μ F,50V,Elect.
D902-D906	22380035 or 22380046	GP104003 or AM01Z	C210	354782299	0.22 μ F,50V,Elect.
D907,D908	224151203	05AZ12Z	C212,C213	354761009	10 μ F,35V,Elect.
D909	224152704	05AZ27R	C215,C216	354780229	2.2 μ F,50V,Elect.
		Coils and Transformers	C217,C218	374723924	3900pF \pm 5%,50V,Plastic
L101	233401	NFIF-4072	C219	354780229	2.2 μ F,50V,Elect.
L102	233402	NFIF-4073	C301,C302	354780229	2.2 μ F,50V,Elect.
L103	233383	NMC-6070 <P/W/Q>	C307,C308	354721019	100 μ F,6.3V,Elect.
L104	233409M022	NCH-1272	C309,C310	374726224	6200pF \pm 5%,50V,Plastic
L151	232152	NMRF-7052,RF block	C311,C312	374721824	1800pF \pm 5%,50V,Plastic
L152	232139	NMIF-4062	C313,C314	354780229	2.2 μ F,50V,Elect.
L201,L202	233294	NMC-5040 <P/W/Q>	C315,C316	354741019	100 μ F,16V,Elect.
L551,L552	231176	S-1.3C	C551,C552	374724734	0.047 μ F \pm 5%,50V,Plastic
		Resonator	C554,C563	354780479	4.7 μ F,50V,Elect.
X103	3010158 or 3010141	XTL-7.2M or XTL-7.2M,Crystal	C555	354722219	220 μ F,6.3V,Elect.
			C905,C906	3504207	6800 μ F,50V,Elect.
			C907,C908	354742219	220 μ F,16V,Elect.
			C910	354783309	33 μ F,50V,Elect.
			C911	354752229	2200 μ F,25V,Elect.
			C913-C915	354761009	10 μ F,35V,Elect.
			C917,C918	354781009	10 μ F,50V,Elect.

CIRCUIT NO.	PART NO.	DESCRIPTION	CIRCUIT NO.	PART NO.	DESCRIPTION
		Resistors			Capacitors
R101	5210221 or 5210070	N06HR100KBD, Trim	C701	3000057 or 3000068	0.1F,5.5V or 0.047F,5.5V,Super
R201	5210216 or 5210062	N06HR5KBD or N06HR4.7KBD,Trim	C702,C704	375524744 353780229	0.47 μ F \pm 5%,50V,Plastic 2.2 μ F,50V,Elect.
R559,R560	452530824	8.2 ohm \pm 5%,1/2W,Metal	C705	353744709	47 μ F,16V,Elect.
R902,R903	441729114	910 ohm \pm 5%,2W,Metal	C706	353780109	1 μ F,50V,Elect.
R904	452530104	1 ohm \pm 5%,1/2W,Metal	R710	49163103404	10 kohm \times 4,1/10W,Array
R905	441723904	39 ohm \pm 5%,2W,Metal			Switches
R906	442531004	10 ohm \pm 5%,1/2W,Metal	S701-S727	25035548 25065286	NPS-111-S510 NSS22112 <W>
		Terminals			Holders
P001	25060157	NTM-4PDML083,Antenna <D>			
	25060117	NTM-2PDML051,Antenna <P/W/Q>			
P301,P302	25045323	NPJ-6PDBL180		27190810	FL
P303	25045172	HSJ1003-01-020		27190811	LED
P551	25060158	NTM-8PDML084,Speaker			
		Relay			
RL551	25065339	NRL-2P5A-DC24-046			
		Sockets			
P310,P901	25050267	NSCT-3P95			
		Radiators			
R1	27160176	RAD56			
R2	27160145	RAD51			
R3	27160166				
DISPLAY CIRCUIT PC BOARD (NADIS-4326-4/4A/4B)					
CIRCUIT NO.	PART NO.	DESCRIPTION	CIRCUIT NO.	PART NO.	DESCRIPTION
		Remote control sensor			ICs
U701	24130007	GP1U571X	Q501,Q502	22240108	μ PC1225H
		ICs	Q517	222502	NJM4558D-X
Q701	22240406	μ PD75268CW-025			Transistors
Q703	22240376	μ PD17103CX-528	Q503,Q504	2202243, 2202244, 2202246, 2202492 or 2202493	* 2SA1694-O, * 2SA1694-Y, * 2SA1694-P, * 2SA1264N-R or * 2SA1264N-O
		FL tube	Q505,Q506	2202253, 2202254, 2202256, 2202502 or 2202503	* 2SC4467-O, * 2SC4467-Y, * 2SC4467-P, * 2SC3181N-R or * 2SC3181N-O
Q702	212093	FIP9BTM8	Q507-Q510	2211255	2SC1815-GR
		Transistors	Q511,Q512	2212600	DTA124ES
Q704	221282	DTC144ES	Q513,Q514	2212285	2SC2878-A
Q705	2212600	DTA124ES	Q515	2211455	2SA1015-GR
		Diodes	Q516	221282	DTC144ES
D702	224150913	05AZ9.1Z	C501,C502	354761009	Capacitors
D703	224150562	05AZ5.6Y	C505,C506	354741019	10 μ F,35V,Elect.
D704	225142	SEL2913K,LED	C507,C508	37472334	100 μ F,16V,Elect.
D705-D707	223163 or	1SS133 or	C515,C516	354780229	0.033 μ F \pm 5%,50V,Plastic
D709-D724	223205	1SS270A	C517	354761009	2.2 μ F,50V,Elect.
		Resonators	C525-C528	354761009	10 μ F,35V,Elect.
X701	3010163	CST4.19MGW,Ceramic			Resistors
X702	3010154 or 3010190	CST8.00MT or CST8.00HSW,Ceramic	R511,R512	5215061	N08HR3KBC,Trim
		Coil	R526,R527	442521004	10 ohm,1/2W,Metal oxide film
L701	233400M220 or 233409K220	NCH-2238 or NCH-1284	R531-R534	4500005	BPR2FK-0.22,Metal plate
					Plugs
			P503,P504	25055495	NPLG-2P470

NOTE: <D>:120 V model only

<P>:230 V model only

<W>:Worldwide model only

<Q>:240 V model only

CAUTION: Replacement for transistor of mark *, if necessary, must be made from the same beta group (H_{FE}) as the original type.

HEADPHONE TERMINAL PC BOARD (NASW-4328-4/4A)

CIRCUIT NO.	PART NO.	DESCRIPTION
S601	25035517	NPS-222-L479,Push switch
P601	25045255	YKB21-5009,Headphone terminal

POWER SWITCH PC BOARD (NASW-4329-4)

CIRCUIT NO.	PART NO.	DESCRIPTION
S751	25035548	NPS-111-S510,Power switch

POWER SUPPLY CIRCUIT PC BOARD (NAPS-4331-4/4A/4B/4C)

CIRCUIT NO.	PART NO.	DESCRIPTION
C901	3500065A	△ DE7150FZ103PAC400V/125V, Capacitor IS
C901A	27301216	△ Cover for C901 <P/w/Q>
R901	431523355	△ 3.3 Mohm,1/2W,Solid resistor <D>
S901	25035550	△ NPS-111-L512P,Power switch
F901	252049	△ 4A(ST-6),Primary fuse <D/W>
F901a	250113	△ SN5051,Fuseholders <D/W>
F902	252073	△ 1.6A-SE-EAK,Primary fuse <P/W/Q>
F902a	25050065	△ YSH403T,Fuseholders <P/W/Q>

TONE CONTROL CIRCUIT PC BOARD (NAAF-4334-4/4A)

CIRCUIT NO.	PART NO.	DESCRIPTION
		ICs
Q401,Q402	222502	NJM4558D-X
		Capacitors
C401,C402	354761009	10 μ F,35V,Elect.
C407,C408	354761009	10 μ F,35V,Elect.
C409,C410	374722234	0.022 μ F±5%,50V,Plastic
C411,C412	354780339	3.3 μ F,50V,Elect.
C413,C414	374722234	0.022 μ F±5%,50V,Plastic
C417,C418	354741019	100 μ F,16V,Elect.
		Resistors
R405,R406	5104225	N11RLC250KWT22Z,Balance,variable
R417,R418	5104230	N14RLC100KWT22Z,Treble,variable
R421,R422	5104230	N14RLC100KWT22Z,Bass,variable

VOLUME CONTROL CIRCUIT PC BOARD (NAETC-4335-4)

CIRCUIT NO.	PART NO.	DESCRIPTION
Q451	22240322	LB1639,IC
C453,C454	374724734	0.047 μ F±5%,50V,Plastic capacitor
C473	354741019	100 μ F,16V,Elect. capacitor
R459,R460	5104243	N16RGM100KBTP25F,Volume, variable resistor
S451	25035609	NPS-122-L571,Loudness switch
P451	25050267	NSCT-3P95,Socket
P452	25050268	NSCT-4P96,Socket

VOLTAGE SELECTOR SWITCH PC BOARD (NASW-4338-4)

CIRCUIT NO.	PART NO.	DESCRIPTION
S902	25065287	△ NSS-22113P,Voltage selector switch <W>

NOTE: <D>:120 V model only

<P>:230 V model only

<W>:Worldwide model only

<Q>:240 V model only

NOTE: THE COMPONENTS IDENTIFIED BY MARK △
ARE CRITICAL FOR RISK OF FIRE AND
ELECTRIC SHOCK. REPLACE ONLY WITH
PART NUMBER SPECIFIED.

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